REWIRING WARFIGHTERS FOR JOINT MINDEDNESS: SOLUTIONS FOR JOINT EDUCATION IN THE 21ST CENTURY

BY

DONN C. YATES

A THESIS PRESENTED TO THE FACULTY OF

THE SCHOOL OF ADVANCED AIR AND SPACE STUDIES

FOR COMPLETION OF GRADUATION REQUIREMENTS

SCHOOL OF ADVANCED AIR AND SPACE STUDIES

AIR UNIVERSITY

MAXWELL AIR FORCE BASE, ALABAMA

JUNE 2010

APPROVAL

The undersigned certify that this thesis meets master's-level standards of research, argumentation, and expression.

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DR KEVIN HOLZIMMER (Date)

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COL MICHAEL KOMETER (Date)

DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.

ABOUT THE AUTHOR

Maj Donn C. Yates is a student at the School of Advanced Air and Space Studies (SAASS), Maxwell AFB, AL. The school teaches officers strategy and policy in classical and contemporary defense studies. Prior to commissioned service in the US Air Force, Maj Yates served with the 2/9 Infantry, 7th ID, Fort Lewis, Washington as an infantryman and TOW missile operator. He received his commission at Officer Training School in August 1997. Major Yates is a senior pilot with approximately 1900 hours—most of them as Pilot and Instructor Pilot in the F-15E Strike Eagle. He flew combat missions in support of Operations Northern and Southern Watch. From 1999-2003, he served as Training Officer, Weapons Officer, and Instructor Pilot in the 492nd Fighter Squadron, RAF Lakenheath, United Kingdom. From 2003-2006, Maj Yates served as Chief of Weapons and Tactics at the squadron and wing level at Seymour Johnson, AFB. In this capacity, he was instrumental in creating cross flow opportunities and tactics development for members of the wing and joint special operations forces. In 2006, Maj Yates served as an instructor at the USAF Weapons School and as flight commander, phase manager, and special operations program manager for the 17th WPS, Nellis AFB, Nevada. From 2007-2008, Maj Yates served as the Director of Staff to the Commandant, US Air Force Weapons School. Finally, he attended Air Command and Staff College where he received a Master of Arts in Operational Arts and Science in 2009. After SAASS, Major Yates will serve as staff officer for Joint Special Operations Command, Fort Bragg, North Carolina.

ACKNOWLEDGEMENTS

This thesis is my attempt to explain a very complicated problem. The journey would not have been possible without a special thanks to the following people. First, I would like to thank my thesis advisor Dr. Kevin Holzimmer at the School of Advanced Air and Space Studies (SAASS) for his invaluable mentorship and incredible patience with me. Additionally, I would like to thank Dr. Jeff Reilly and Col (ret) Richard Perry of the Department of Warfare Studies at the Air Command and Staff College for their tireless efforts to help shape my thoughts.

ABSTRACT

Despite the efforts of the Goldwaters Nichols Act of 1986, jointness continues to be a problem in the Department of Defense. Scholars point to both organizational and cultural problems as the root of the problem, but these explanations are incomplete. People comprise organization and people use culture as means of to explain identity, norms, and behavior. The individual level of analysis emerges as another explanation to the problem of jointness in order to complement the other two. In order to do this, the author uses the P2C framework as a means to develop joint-mindedness through the development of cognitive symmetry between officers from different services. P2C represents three elements: perspective, perception, and context. Cognitive symmetry occurs during the alignment of these three elements between individuals. Mistaken perspective, misperception, and faulty context create conditions for cognitive asymmetry which leads to problems with jointness.

The current DOD Joint Qualification System (JQS) does not facilitate joint-mindedness. This system uses points and qualification levels to accredit prospective officers as joint qualified officers (JQO) but makes no provision to make them joint-minded. Additionally, the system gives the impression that joint qualification is a means for promotion to higher rank and not a method to inculcate jointness among the service branches.

The author uses four Joint Environment Opportunities (JEO) for analysis of the current JQS: education, operations, staffwork, and training. The author evaluates each JEO against five criteria. The criteria are opportunity, frequency, perspective, perception, and context. From this analysis, education emerges as the best venue to develop joint-mindedness within the DOD. To facilitate this new approach, the author proposes three recommendations for joint education.

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Those who know when to fight and when not to fight are victorious. Those who discern when to use many or few troops are victorious. Those whose upper and lower ranks have the same desire are victorious. Those who face the unprepared with preparation are victorious.

Sun Tzu

Joint operations involve two or more military services that cooperate towards a common goal. The United States uses joint operations in times of crisis when it employs the military instrument of power. All wars in the past 100 years where the United States has participated have involved varying degrees of joint operations. 100 years is a long time to practice and get something right, yet jointness, the ability to act as a member of a joint force, continues to be a difficult problem for the US Armed Forces. When joint operations go wrong, often the services point the finger of blame at each other. Part of the backdrop of the dialogue on joint operations is the fight over budgets to support their individual view of how to wage warfare. Senior officers disagree over military employment methods in “supported” or “supporting” roles, key doctrinal concepts currently used to guide the joint force. Additionally, services worry about losing influence to each other during changes in the operational environment if they cannot show themselves to be “relevant” to every military operation. The resultant problem is endemic How can the world's superpower, the finest military ever assembled, still have problems in this arena? The security environment of tomorrow is uncertain and complex. In order to meet this challenge, the problem of jointness demands a new approach. To meet the challenges of tomorrow's security environment, the United States must rely on a competent joint military force that can achieve superiority. The

problems of tomorrow require synergy in all warfighting domains.[1] The Department of Defense document Joint Vision 2020 explains this synergy by stating

> The foundation of jointness is the strength of individual Service competencies pulled together. Our objective in implementing the joint vision is the optimal integration of all joint forces and effects. To achieve that goal, the interdependence of the Services requires mutual trust and reliance among all warfighters and a significantly improved level of interoperability- especially in the areas of command and control and sustainment. This interdependence will ultimately result in a whole greater than the sum of its parts, and will contribute to achieving full spectrum dominance through all forces acting in concert. The synergy gained through the interdependence of the Services makes clear that jointness is more than interoperability.[2]

The US military acts as a joint force today in Iraq and Afghanistan; these operations make huge gains towards jointness. Despite these operational successes, cooperation between services is still a controversial subject.

Why is this still a problem? Why do the services place blame on each other for a lack of jointness? First, the question requires a definition of jointness. A joint force is composed of two or more military services organized under a single joint force commander and operating towards a common objective. Jointness is an expression used to describe cooperation among the services on all stages of military processes. These processes include research, procurement, and operations.[3] Jointness is not a new term. The concept has been in existence since armies and navies supported

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[1] Warfighting domains include Air, Space, Cyberspace, Land, and Sea.
[2] Henry Shelton, *Joint Vision 2020* (Washington, DC: U.S. Joint Chiefs of Staff, 2000), 34.
[3] This definition explains jointness as it is commonly understood. Jointness involves planning, procurement of systems, military operations, and cooperation. Jointness refers to a collective effort and does not imply that ALL services must participate.

each other in conflicts though out history. In 1986, the US Congress grew weary of several US military failures that all pointed to a lack of jointness. To combat this problem, Congress passed the Goldwater Nichols Act (GNA). GNA, among other military reforms, promised jointness through legislation.

The US government passed the Goldwater-Nichols Act in 1986 in response to criticism against the military that it could not perform joint operations effectively. Operations Eagle Claw and Urgent Fury were still fresh in the minds of the public. Eagle Claw was the failed rescue of hostages held in Tehran. During this mission, a joint special operations task force ran into difficulties because the forces had not trained together. As a result, lives were lost after two aircraft collided on the ground after the mission commander decided to abort. Operation Urgent Fury, the invasion of Grenada to rescue student hostages, is widely considered a success. Despite the success of the mission, Congress criticized the services for not being able to communicate effectively with each other. In addition, command and control was inefficient while the services overtook the small communist force on the island. GNA promised to shake the foundation of the Department of Defense (DOD) and force jointness on the services in the name of effectiveness.

The GNA changed the entire DOD. The Act created four innovations to streamline chains of command and force the services to act more jointly. First, GNA centralized military advice from the service chiefs to the Chairman of the Joint Chiefs.[4] Second, GNA gave the services the sole responsibility to organize, train, and equip forces for use by geographic combatant commanders (GCC) or functional combatant commanders (FCC).[5] GCCs would receive the forces they needed in a given theater from the services who acted as force providers. Shared

[4] James Locher, *Victory on the Potomac: The Goldwater-Nichols Act unifies the Pentagon (*College Station, TX: Texas A&M University Press, 2002), 438-440.
[5] Ibid., 440-441.

procurement was the third innovation.[6] GNA provided a unified structure via a Joint Requirements and Oversights Council (JROC) whose duty is to preside over DOD requirements and ensure the joint force has visibility on each other's capabilities. Finally, GNA forced changes on the management of personnel within each service to force joint awareness.[7] These measures made it mandatory for all officers to serve at least one joint assignment prior to obtaining the rank of general or flag officer. In the eyes of Congress, the DOD did not have a record of accomplishment of working well together and sought to create structures that would force this cooperation. Despite the efforts of Congress, however, jointness is still a problem 20 years later.

All of the services exhibit preferences and ideologies that support their parochial causes at the expense of the other services. Several authors have offered indirect explanations for the failure of GNA, each one focusing on different levels of analysis. The first level looks at service culture as the barrier to jointness. Advocates of cultural explanations explain the lack of jointness in terms of differences in service cultures. Carl Builder, in *Masks of War: American Military Styles in Strategy and Analysis,* uses five "faces" to reveal cultural differences between the services. Builder uses these distinctions to draw conclusions about service identity within the services by showing cultural influences. One example Builder uses is the face he calls altars of worship.[8] Altars of worship describe those principals or ideas that a service holds dear. The Navy worships at the altar of tradition. According to Builder, "the reverence for tradition has continued to the present, not just in pomp or display, but in the Navy's approach to almost every action from eating to fighting."[9] The Army's aim is less apparent and more subtle. According

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[6] Ibid., 443.
[7] Ibid., 438.
[8] Carl Builder, The Masks of War. (Washington, DC: The Johns Hopkins Press, 1989), 17.
[9] Ibid., 18.

to Builder, the Army finds its identity "with the depths of its roots in the citizenry, its long and intimate history of service to the nation, and its utter devotion to the country."[10] The Air Force worships at the altar of technology. The Air Force exists to employ the airplane, a form of technology. Builder explains, "if the Air Force is to have a future of expanding horizons, it will come from understanding, nurturing, and applying technology. If the Air Force fosters technology, then that inexhaustible fountain of technology will ensure an open ended future for flight; that in turn will ensure the future of the Air Force."[11]

The recent firing of Air Force leadership in 2008 illustrates this point. On June 5, 2008, Secretary of Defense Gates relieved both the Secretary of the Air Force and the Air Force Chief of Staff. Discrepancies over USAF nuclear surety issues led to the firings according to official statements from Gates. Despite this position, Gates acknowledged that he had several disagreements over other issues.[12] These included disagreements over funding the F-22, the establishment of joint Air Force - Navy bases, and the increase in the number of ISR orbits in support of operations in Iraq and Afghanistan.[13] The Air Force points to the F-22 as the guarantor of air dominance in tomorrow's wars. In the cultural context, the F-22 is a cultural artifact that reinforces the Air Force identity, mission, and reason for existence. The decision to fund F-22, in this context, at the expense of increasing ISR orbits is based on cultural factors that emphasize the Air Force's belief in its own force modernization as the priority as opposed to the joint requirements of the conflicts in Iraq and Afghanistan.

Approaching the continued problem of jointness from a different level of analysis, Graham Allison and Phillip Zelikow, in their book

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[10] Ibid., 20.
[11] Ibid., 19.
[12] Rowan Scarborough, "Air Force firings followed budget battle." The Washington Times, 15 June 2008.
[13] Ibid.

Essence of Decision: Explaining the Cuban Missile Crisis, offer an explanation that forces one to look not on service culture but organizational influences on military decision-making. Although not framed in the context of jointness, their Model II Organizational Behavior is still indicative of organizational biases and is relevant for comparison in this discussion. Allison and Zelikow list five generalizations about organizational behavior. First, "organizations bring people together for a transient purpose. Second, organizations create capabilities for achieving humanly chosen purposes and performing tasks that would otherwise be impossible. Third, existing organizations and routines constrain behavior by addressing it already oriented toward doing whatever they do. Fourth organizational culture emerges to shape the behavior of individuals within the organization in ways that conform to informal as well as formal means. Fifth and finally, organizations are thus less analogous to individuals than to a technology or bundle of technologies."[14]

Utilizing the organizational framework, one would contend that the decision to fund the F-22 by the Air Force and not increase ISR may be explained by the U.S. Air Force's desire to protect its service interests more than joint concerns. The organization's self-defined primary purpose--air dominance--and its organizational interests that support this purpose influenced the Air Force's F-22 position. In summary, military services are large organizations bonded by purpose and organizational identity. Using Allison's and Zelikow's framework, organizational behavior influences each service and prevents mutual understanding due to issues of process, purpose, and identity, all of which tend to promote service parochial interests rather than the joint community.

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[14] Graham Allison and Phillip Zelikow, *Essence of Decision Making: Explaining the Cuban Missile Crisis.* (New York, NY: Longman Publishing, 1999), 145-146.

Cultural and organizational explanations represent collective views of the problem of jointness. From this departure point, a third level of analysis emerges as the foundation for cultural and organizational explanations: the individual. Individuals use shared attitudes, values, and goals in their identification with culture. Logically it follows that people use culture and without people, culture does not exist. Furthermore, individuals comprise organizations. They are the building blocks of organizations and define the purpose of the organization, set its goals, and create capabilities for the organization to use. Cultural and organizational explanations add support, but the author contends the root of the problem is the individual. People carry predispositions with them based on experience, perceptions, and beliefs which given enough time, experience, and exposure creates "baggage". Legalistic reforms to coerce the Services to change both organizational and cultural barriers have been a step in the right direction but are inadequate because they only focus on correcting jointness from the top down. The individual level of analysis therefore complements the top down approach by looking at the problem from the bottom up. If individuals are part of the problem, then it makes sense that understanding how the individual views the world around him/her and interacts with it should be the focus of any definition of the problem.

To look at the individual level of analysis, social psychology provides important insights into how individuals react with their environment. Social psychology studies "the attitudes and behaviors of individuals in relation to their social environment and the interaction among persons."[15] The Reductionist view of social psychology is applicable to the discussion of jointness because it infers that intergroup conflict, as that witnessed in interservice rivalry and competition, can be reduced to interpersonal problems between individuals. According to

[15] Neil Smelzer, *Sociology* (Cambridge, MA: Blackwell Publishers, 1994), 4.

social psychologist Michael Billig, "the social psychological theories of conflict lay great emphasis on such variables as perceptions and misperceptions, channels of communication, threats, etc. All these variables can affect the course of interpersonal interaction, and therefore by implication can affect intergroup relations."[16] This analysis of the individual provides a more comprehensive understanding of the jointness problem. If jointness remains a problem due to both organizational and cultural explanations, then facilitating change at the individual level overrides these explanations by addressing the problem at the root.

Although military professionals often scoff at anything other than the "hard" sciences, the problem falls within the realm of social psychology, which rests upon two complementary arguments. The first states jointness is tied to the individual and the perceptions, perspectives, and context with which he/she views a given situation as compared to another individual. Cognitive symmetry between individuals with these three factors creates an environment where cooperation occurs and intergroup rivalry decreases. When cognitive asymmetry between two people is present, misperception, cognitive dissonance, and social barriers create subjectivity. The existence of objectivity among individuals of the services would lead to jointness as these individuals have common joint perceptions, perspectives, and context. Thus the approach to solving a lack of jointness requires a new way of thinking that focuses on developing cognitive symmetry among officers of different services. Joint-mindedness, the central focus of this new way of thinking, focuses on the development of objectivity in individuals, and it is the center of gravity for a new approach to facilitating jointness. By focusing on the individual first, eventually the service organizations and cultures would thus adopt joint symmetry.

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[16] Michael Billig, Social Psychology and Intergroup Relations (Birmingham, UK: Academic Press, 1976), 227.

To develop joint-mindedness, the main argument of this thesis provides a new framework entitled P2C. P2C is comprised of three elements: common perceptions, shared perspectives, and proper context. Symmetry among these factors is optimal. The end state for this framework is a body of individuals who approach operational problems in an objective manner, with rational behavior through critical thinking and critical analysis.

The second and supporting argument of the thesis states that the current way of creating and accrediting joint officers is through the Joint Qualification System, which—despite the admirable and sincere intentions of its creators—is inadequate to facilitate the development of true jointness. This is due to the linear system approach of the Joint Qualification System that exhibits many possible single point failures and functions on critical assumptions that do not hold true for all. The system has devolved into a pathway to higher and higher rank, a checkmark in a box in an officer's promotion paperwork at the expense of developing officers who exhibit objectivity and affective behavior. In the end, the current system produces joint qualified officers who are not necessarily joint-minded. The two concepts are different but related. Conversely, there are examples of joint-minded officers who are not joint qualified.[17] Some critics may suggest that "joint-mindedness" (or any other attempt to achieve true jointness) is an attempt to merge the services or give more responsibility and authority to one at the expense of the other. This, however, is a red herring. Instead, this monograph does not make either argument, nor does it make the case for a decreased emphasis on service cultures or methods. To the contrary, a fundamental assumption is that to be an effective joint officer, one will

[17] Joint Qualification Officer (JQO) is the new term to describe individuals who are experts in joint matters. JQO implies a level of qualification under the Joint Qualification System. Joint Specialty Officer (JSO) was the previous term. The author points out the differences between the two labels in Chapter 3 of this monograph.

always have to bring his/her service expertise and perspective to the joint table.

The following roadmap expands the problem solution methodology to explain jointness from the individual level of analysis. First, as this thesis looks at a heretofore unexplored part of jointness (i.e., the individual level of analysis), social psychological theory will be used to understand how joint-mindedness may be introduced at the individual level. Furthermore, social psychological theory will serve as the foundation of a new framework (P2C) containing three elements: perspective, perception, and context. Creating cognitive symmetry is the foundational concept of being joint minded at the individual level. In short, social psychological theory provides important insight into how individuals understand their environment and accordingly act therein.

The first P2C element is perspective. In order to understand someone else's viewpoint, an individual must understand the perspective of that other person. To accomplish this, people must see past individual filters that prevent them from understanding differing perspectives. Gordon Allport's ideas in The Nature of Prejudice about stereotyping provide a means to understand the filters in practice. If people see others in an unfavorable light due to stereotypes, then sharing perspective with people who are different is problematic. Perspective is the foundation for developing cognitive symmetry using P2C.

Perception is the second P2C element. Creating cognitive symmetry through perception and not misperception facilitates joint-mindedness. Misperception results from cognitive dissonance and creates cognitive asymmetry. To correct this asymmetry (and eventually make symmetry the norm), the author will demonstrate how Experiential Learning Theory provides a mechanism to correct perception through "hands on" learning in different service environments while reducing cognitive dissonance. .

Finally, for the final aspect of the P2C framework—context—schema theory sheds insight into the mental structures which individuals use to organize knowledge and assumptions about the world.[18] People use them for interpreting and processing information. Individuals that operate within a military service develop *service* schemas that provide ways of connecting their occupational duties to the world at large. Examples of service schemas include strategic bombing for the Air Force and amphibious warfare for the Marine Corps. To be effective, jointness requires *joint* schemas. If an individual has not learned and accepted these joint schemas, then that individual cannot understand the context for a given joint situation.

The thesis, then, uses social psychology, Gordon Allport's ideas about combating stereotyping, and Schema Theory—to construct the P2C framework, the way in which the author argues that jointness can be implemented at the individual level. It is meant to work in tandem with the organizational and cultural reforms for the problems of a lack of jointness and not as a substitute, not as a substitute or panacea.

The P2C framework then acts as a baseline for examining the development of individual officers and their joint development. With this in mind, the thesis then turns its attention to an examination of how the DOD currently creates joint officers through the Joint Qualification System. The system produces Joint Qualified Officers (JQO). The current approach focuses on the individual while placing him/her into a collective identity of jointness. This collective identity involves all of the services acting as one joint entity. This orientation towards the collective identity focuses on the "joint" force via the individual services rather than the individual level (which is where the P2C framework comes in). In this approach, the collective identity subsumes the individual service identities and places greater emphasis on the collective than on the

[18] Although not cited directly, Schema Theory builds on the works of Piaget.

individual. To understand the pitfall of a collective approach, the individual must first learn *all* of the individual component parts (Army, Air Force, Navy, and Marines) before he can understand the collective one. The collective approach to jointness does not account for asymmetry between service individuals and misses developing P2C. The product of the system is a person who is joint qualified but not necessarily joint minded.

To examine the effectiveness of the current Joint Qualification System, the paper will examine the system through four joint environment opportunities (JEO). These four JEOs are operations, staffwork, training, and education. The analysis measures each JEO against five factors: frequency, opportunity, perception, perspective, and context to show the realities of the system against the intended results of the system. Of the four JEOs, education emerges as having favorable ratings in four of the five categories. Education occurs frequently and provides opportunities throughout a person's career. Opportunities to attend in residence military programs, however, decline due to the competitive nature of screening processes as careers reach a mature state. Nevertheless, education is one of the key places in which officers develop perspectives and context, but it only moderately influences the development of the perception element. Consequently, education is *the* primary vehicle to develop joint mindedness. While the author recognizes the importance of joint professional military education (JPME) for enlisted service members, the paper only addresses JPME for officers.

The problem of jointness requires a new approach. Cultural and organizational explanations are insufficient and require an additional level of analysis. The individual level provides an avenue to understand the social psychological barriers at play. P2C provides the framework to create cognitive symmetry in officers who will lead the joint forces of tomorrow. Cognitive symmetry creates joint-mindedness, which is the

center of gravity for a new way of thinking about solving the jointness problem.

Chapter 1

Joint Mindedness

Few men occupy themselves in the higher problems of war. They pass their lives drilling troops and believe this is the only branch of military art. When they arrive at the command of armies they are totally ignorant, and in default knowing what should be done - they do what they know.

Maurice Comte de Saxe

Joint operations describe events where two or more military services work together to achieve a common goal. In the pursuit of this goal, joint operations allow the ability to seize the initiative and gain victory by using all elements of military power toward one common purpose achieving unity of effort. Joint Publication 1-02 defines unity of effort as, "coordination and cooperation toward common objectives, even if the participants are not necessarily part of the same command or organization."[1] Despite the best efforts of both civilians and military professionals alike, jointness continues to allude the services due—not to primarily service culture or organizational factors—but to individual psychological factors. Consequently, the problem needs a new approach to diagnose and remedy the ailment of the lack of jointness. This new approach focuses at the individual level of analysis and suggests that it is here that DOD needs to focus its efforts on developing joint-mindedness.

Joint-mindedness facilitates jointness and not vice versa. Joint-mindedness is defined as the lens through which US service men and women view their service's mission and other services' missions in the

[1] Department of Defense. Joint Publication 1-02: Department of Defense Dictionary of Military and Associated Terms. (Washington, DC: Dept of Defense, 2007), 564.

battlespace.[2] The joint mindedness concept does not include a view that relies solely on an individual's analysis of a specific warfighting domain due to the overlapping nature of certain forces that operate in the same domain but rather relies on an empathetic appreciation for how other services view the domain. For example, the Marine Corps and the Air Force conduct operations in the air but both view and use airpower in fundamentally different ways. The Air Force uses airpower to achieve effects across the entire depth of the battlespace whereas the Marine Corps uses it to support the Marine Air and Ground Task Force (MAGTF) in close air support. The term mindedness infers an "aspect of intellect and consciousness experienced as combinations of thought, perception, memory, emotion, and includes all of the cognitive processes."[3] Thus, joint-mindedness defines one's perceptions as a joint warfighter thru the lens of shared belief and understanding of specific service warfighting nuances and capabilities. Once joint-mindedness occurs, objectivity (the state in which individuals share common joint perceptions, perspectives, and context) rises above service parochialism and orients the individual towards accomplishing the mission effectively with the means available. The recognition that the most effective and efficient way to execute the mission (regardless of service culture or service organizational interests) is through joint operations becomes the catalyst that develops joint-mindedness. Joint-mindedness is an individual's lens through which he/she views the execution of military operations and involves the cognitive processes that shapes one's perceptions, perspectives, and context (P2C). Asymmetries between these factors are at the root of the problem.

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[2] Joint mindedness is not a new concept. Many documents mention joint mindedness but limit the concept to an individual's view of one's own battlespace. See Brain Hanley, "Thoughts on building joint-mindedness. (Retreat from Moscow: The Memoirs of Sergeant Bourgogne 1812-1813, Sagittarius Rising, Japanese Destroyer Captain) Book Review, *Joint Forces Quarterly*, 1 January 2008, 140-141.

[3] *Webster's Dictionary,* http://www.merriam-webster.com/ (accessed 21 Apr 2010).

The nature of the problem is the individual and the hard wiring that occurs throughout his/her career because of being exposed to only this one particular organizational way of operating. To broaden an individual's perspective on military operations beyond his/her own service, the P2C framework may be used to analyze the social psychological factors that not only illuminate the factors that inhibit joint mindedness but—more important—allow joint mindedness to become a reality. Further discussion warrants definitions of these key terms. Perspective is defined as a subjective evaluation of relative significance to a given topic or viewpoint from the lens of an individual that is shaped by experience and opinion.[4] There is both a cognitive component and a visual component of perspective. The visual component is merely how an object appears to the eye. Different people see different things.

The next term is perception. Perception is the "process of attaining awareness or understanding of sensory information. The word perception comes from the Latin words *perceptio*, *percipio*, and means receiving, collecting, action of taking possession, or apprehension with the mind or senses."[5] Perception develops into insight, intuition, or knowledge gained from direct observation or acute cognitive analysis. Experience also shapes perception and is highly subjective. More importantly, it is very difficult to overcome faulty perceptions once they are established.

The third term is context. This author defines context as the relationship of perceptions and perspectives within a given setting for gaining understanding or meaning towards current or future actions.[6] The interplay between these three factors shapes an individual's thought processes and influences the manner in which he or she views the world.

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[4] The author derived the initial concept for the definition from various dictionary sources but expanded the definition to his view based on his understanding of what perspective is and why it is important.
[5] Oxford Dictionary, http://www.askoxford.com/?view=uk (accessed 15 April 2010).
[6] The context definition is unique in the sense that it includes both perception and perspective. This is the author's definition for the term.

The world, in this argument, encompasses the joint environment. The interplay of these three factors form the basis for how an individual interacts within the environment, specifically in the choices he/she makes, the conclusions that he/she formulates, and the ideas that he/she develops and learns as the ideas pertain to the use of military force to set the conditions towards favorable political outcomes. The P2C construct is a way individuals can become joint-minded, using the construct to see past service parochialism and share a common view of the battlespace, from all lenses, through the eyes of an objective warfighter. Developing this cognitive conceptual framework in individuals is the catalyst to increase jointness. The effective accomplishment of the mission—viewed objectively and symmetrically—is at the heart of the P2C framework purpose; it is, in other words, the catalyst to develop joint-mindedness.[7]

To be sure, individual joint-mindedness faces many barriers, organizational and service cultural factors being near the top of the list. At the individual level, there are psychological factors at play that are synonymous with the concepts of "hard wiring" or programmed. This hard wiring works against the common P2C framework and enables misperception, deficient perspective, and faulty contexts. Taken holistically, these negative factors cause the individual to have a negative joint-mindedness P2C outlook. There are many psychological factors at play that undermine joint-mindedness, but three theories best explain the most important: stereotyping, cognitive dissonance theory, and schema theory. First, stereotyping affects an individual's perspective and creates a false frame of reference. Second, cognitive dissonance theory explains how misperceptions lead to mental roadblocks about alternative solutions. Finally, schema theory explains how an individual's

[7] As discussed in the Introduction, symmetry refers to properties that posses relative similar size, shape, and position in corresponding parts. Two people have P2C asymmetry when they share perspective, have common perceptions about the subject debated, and understand the context with which perspective and perception are used.

experience and knowledge affects the context with which an individual frames his/her environment. Stereotyping, cognitive dissonance theory and schema theory are the social psychological factors that affect the individual which in turn are barriers to jointness.

Stereotyping, Contact Hypothesis, and the Perspective Element

Stereotyping is the first individual psychological barrier. A stereotype is defined as "a simplified and standardized conception or image invested with special meaning and held in common by members of a group."[8] Stereotypes abound among the services.[9] The Army has the "grunt". The grunt reference refers to the individual soldier who charges the hill despite the potential cost to life or limb. This infers a certain level of mechanical obedience as well as notions of heroism when the mission goes well. According to the stereotype, mechanical obedience gives way to intellectual inferiority because infantryman follow and do not question orders. The Marine conjures images of “the few and the proud” and climbed Mount Suribachi to plant the US flag after the Battle for Iwo Jima. The Marine—so the stereotype tells us—can adapt and overcome any obstacle to mission success. Their motto is to improvise, adapt, and overcome.[10] The Marine also conjures the same images as the Army grunt concerning mechanical obedience and intellectual inferiority. Naval officers wear "ice cream" suits. Other officers

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[8] Gordon Allport, *The Nature of Prejudice*. (Cambridge, MA: Perseus Books, 1954), 12.
[9] These stereotypes are the result of numerous discussions with peers during the author's time at Air University 2008-2010 and throughout his career. In addition, the author has in-depth experience with all branches of the armed forces as a former US Army infantryman as well as an instructor at the US Air Force Weapons School. During this period, the author worked extensively with all of the other services in efforts to integrate capabilities with USAF platforms.
[10] This unofficial Marine Corps slogan originates from the fact that the Corps operated with second-hand Army equipment throughout its history. Despite this, Marine individuals are very skilled at improvisation and creativity, which has led to operational and tactical success." Taken from http://www.answers.com/topic/ improvise-adapt-and-overcome

stereotype them as being homosexual because of the nature of their sea duty and the past exclusion of women aboard combat ships.[11]

The US Air Force provides additional fuel to the fire. The USAF draws stereotypes from all of its mission areas. The notion of the pilot, high above the battlefield and free of the blood and sweat of the soldiers and marines below, is the first one that comes to mind. Satellites and computers do nothing to dissuade this vision that airmen are somehow sanitized from the battlefield. This creates the perspective among the other services that airmen are detached from warfare and therefore do not understand the perspectives of the other services. On 30 July 2009, General David Petraeus made the following comment during a Marine Corps social function. Despite the jab being in good nature, General Petraeus' comments are evidence of this view on the USAF's perspective:

> The Marines' sense of toughness permeates the Corps' lore as well as its reality. To recall an illustrative story, a soldier is trudging through the much in the midst of a downpour with a 60-pound rucksack on his back. "This is tough," he thinks to himself. Just ahead of him trudges an Army Ranger with an 80-pound pack on his back:"This is really tough," he thinks. And ahead of him is a Marine with a 90-pound pack on. And he thinks to himself, "I love how tough this is!" Then, of course, 30,000 feet above them, an Air Force pilot flips aside the ponytail-I'm sorry, I don't know how that got in there, they haven't had ponytails in a year or two-and looks down at them through his cockpit as he flies over. "Boy," he radios his wingman, "It must be tough down there."[12]

Despite the USAF's tremendous contribution, General Petraeus' comments demonstrate there is a fundamental difference in perspective between the Army and the Air Force. This is the "30,000 foot" view that

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[11] This stereotype originates from a quote by Winston Churchill in reference to the Royal Navy. According to Churchill, "Britains naval tradition is nothing but rum, sodomy, and the lash." Patrick Barkham, "Navy's new message: your country needs, especially if you are gay". *The Guardian*. 21 February 2005.

[12] David Petraeus, "An open apology from General Petraeus." Air Force Times, 5 September 2009. http://www.airforcetimes.com/news/2009/09/airforce_letter_petraeus_090309 (accessed 5 January 2010).

airmen are described as having, and it dominates other services' perceptions at every level within the DOD.[13]

How is perspective achieved? First, the individual must see past the mental barriers at play (such as stereotypes). The approach must attempt to "re wire" the individual to accept new perspectives. Stereotyping provides two useful pieces of the puzzle. First, it describes the mental process that is at play that is working against gaining developing alternative perspectives. Second, by the very fact that it is a stereotype helps explain how to fix it through Contact Hypothesis and the "contact episode" concept.

The explanation for stereotypes brings thoughts of abuse and negativity while concurrently explaining their function in group settings. According to Richard Dyer, "this stems from the wholly justified objections of various social groups to the ways in which they find themselves stereotyped in the mass media and everyday speech."[14] When Walter Lippman initially coined the term in 1922, he did not intend the concept to have strictly a pejorative definition.[15]

> A pattern of stereotypes is not neutral. It is not merely a way of substituting order for the great blooming, buzzing confusion of reality. It is not merely a short cut. It is all these things and something more. It is the guarantee of our self-respect; it is the projection upon the world of our own sense of our own value, our own position and our own rights. The stereotypes are, therefore highly charged with the feelings that are attached to them. They are the fortress

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[13] This statement is the author's opinion. Numerous interviews, conversations with peers, and briefings by senior leaders convey this perception. These observations occurred during the years the author attended Professional Military Education 2008-2010.

[14] Richard Dyer, "The Role of Stereotypes," in *Media Studies: A Reader,* ed. Paul Marris and Sue Thornham 2nd Edition (Edinburgh, UK: Edinburgh University Press, 1999). http://www.english-e-corner.com/comparativeCulture/core/deconstruction/framese/stereotype.htm (accessed 29 April 2010).

[15] Ibid.

> of our tradition, and behind its defenses, we can continue to feel ourselves safe in the position we occupy.[16]

Stereotypes function as an ordering process, a short cut, a reference to the world, and an expression of our values and beliefs.[17] Dyer further elaborates on the importance of the fourth concept that is most pertinent to support the argument that stereotypes are extremely important to the understanding of socio-psychological factors that affect jointness:

> It is Lippman's reference to our tradition, and indeed his use of 'our' and 'we' in the previous passage quoted that takes us into the most important, and most problematic, issue in stereotyping. For we have to ask who exactly are the 'we' and 'us' invoked by Lipmann? The effectiveness of stereotypes resides in the way they invoke consensus. Stereotypes proclaim, 'This is what everyone-- you, me, and us -- thinks members of such and such a social group are like. The stereotype is taken to express a general agreement about a social group, as if that agreement arose before, and independently of, the stereotype. Yet for the most part, it is from stereotypes that we get our ideas about social groups.[18]

Logically then, if stereotypes are generally negative and people use them to build consensus about a specific social group, then the perspective one will have about that group's views, ideas, values, and beliefs are likely to be negative as well. Although officers of the US armed forces often use stereotypes in jest to characterize others from different services, the potential exists for barriers to occur between two individuals with different perspectives. Breaking down these barriers in order to create shared perspectives is the first step to develop joint-mindedness.

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[16] Ibid.
[17] Ibid.
[18] Ibid.

Stereotypical categorization is best viewed in a traditional approach to the effects of intergroup contact.[19] This approach "characterizes intergroup perception as a process of "autistic hostility", that is, a self-amplifying cycle of antagonism, separation, and unrealistically negative attributions. Intergroup hostility leads to avoidance, which in turn leads both to more extreme negative perceptions and to an inability to test those perceptions against reality."[20] Moving beyond stereotyping is possible by direct personal experiences as well as by indirectly obtained information. According to social scientists, stereotypic beliefs about groups may come from two sources. The first source is direct contact with members of the stereotyped group. The second source is indirect atmosphere effects.[21] Atmosphere effects describe environmental influences such as those put forward by peers, the media, social norms, and organizational norms.

Gordon Allport's Contact hypothesis provides a mechanism to reduce stereotypes. Contact hypothesis describes a process by which stereotypical beliefs are changed or affirmed by contact episodes. Allport defines contact episodes as occurrences where individuals interact with each other and either provide confirming or disconfirming evidence about a stereotype.[22] Contact episodes, in this context, are those experiences where service members react with and are exposed to the ideas of other service officers. For the purposes of studying the creation of joint-minded officers, this author labels such contact episodes Joint Environment Opportunities (JEO) and categorizes them into four distinct areas: operations, training, staffwork, and education. During these contact episodes, individuals place both super ordinate and subordinate labels on stereotyped groups/individuals. People derive these labels from

[19] M. Rothbart and OP John, O.P. "Social categorization and behavioral episodes: A cognitive analysis of the effects of intergroup contact." *Journal of Social Issues*, no. 41 (1985): 81-104.
[20] Ibid., 82.
[21] Ibid,, 83.
[22] Ibid,, 83.

objectively verifiable attributes such as gender or race.[23] Placed within the context of the joint environment, these attributes are uniform or military specialty; they also include observed job performance. For application within this framework, the super ordinate label is a joint-minded officer. The subordinate label is the individual branch of service. Research shows that individuals invest in subordinate labels naturally because—in the case of military organizations—each service establishes its initial standards for new officers in terms of both entrance requirements and objectively verifiable attributes, upon which the officer's performance is ultimately judged.[24] As a result, stereotypic attitudes on the part of the officer corps in a particular service are a possible result, in part because of the acculturation process that takes place as a person becomes an officer through the services academies, officer training schools, or Reserve Officers' Training Corps as well as the ways services establish continued professional development.

To reduce the resultant stereotypic behavior, one needs to break an individual's psychological reliance on his or her service. As psychologists Myron Rothbart and John P. Oliver argue: "In order to achieve changes in stereotypic beliefs, it is necessary to attach the disconfirming attributes to the super ordinate category label, instead of the more natural subordinate category."[25] Therefore, to be truly effective and reduce stereotypic behavior, the super ordinate level requires disconfirming evidence over the subordinate level. For the purposes of this discussion, successful measures to reduce stereotypic behavior help the individual see past the color of another's uniform with the lens of their service and realize the capabilities another individual may bring with regards to joint warfighting capability.

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[23] Ibid., 102.
[24] Ibid,, 102.
[25] Ibid., 102.

Gordon Allport's *The Nature of Prejudice* makes the case that properly managed contact episodes between groups who possess stereotypical beliefs about others actually reduces problems and leads to better interactions. However, it is necessary to remember that groups comprise individuals. These individuals acting within the group influence the group's behavior. In order to reduce the effects of this behavior, four conditions must be present (Figure 1). First, the groups must have equal status. Second, there must be cooperative activity. This cooperative activity requires the separate groups to work on a problem or task and share this as a common super ordinate goal. Third, personal interaction must occur in order to force interdependence to achieve the super ordinate goal. Finally, the groups must recognize an authority. This authority defines social norms that support the contact and interactions between groups and members.[26]

1	Group/Individuals must have equal status.
2	Cooperative Activity must be present.
3	Personal interaction must occur.
4	An authority must exist that groups/individuals recognize.

Figure 1: Allport's Four Conditions

Source: Author's Original Work

Thinking broadly, there are contact episodes across the entire DOD. Airmen interact with Army, Air Force, Navy, and Marine personnel, for example, in Iraq and Afghanistan on a daily basis. In addition, contact occurs on joint and service specific planning staffs as well as at individual service colleges. In all of these instances, however, it would be difficult to find environments that met all four conditions listed

[26] Gordon Allport *The Nature of Prejudice* (Cambridge, MA: Perseus Books, 1954), 5-35.

previously which are necessary to ensure that contact episodes may promote behavior change. For example, the USAF is the supporting element in operations whereas ground forces, either Army or Marine, are the supported commander. Although not stated outright, this implies that there is unequal status. Reducing stereotypical behavior, therefore, is difficult in these cases. Despite the numerous opportunities for contact episodes, it is difficult to set the four conditions necessary to reduce—if not eliminate—stereotyping and replace it with behavior change. Consequently, the stereotypes developed in the officer corps through accession and career milestones are not altered, and these perspectives of the individual officer create a psychological barrier to jointness. Developing joint-mindedness in the individual, however, reduces this tendency. Therefore, it is necessary—if jointness is to be achieved through the establishment of joint-mindedness—for DOD to establish controlled environments where learning could occur under these four conditions. Grouped together, Allport's 4 conditions represent the "Perspective" element in the P2C framework.

Cognitive Dissonance Theory and the Perception Element

Cognitive dissonance among individual service members is the second barrier to joint mindedness and provides additional but necessary information towards understanding and ultimately overcoming the psychological barriers to super ordinate beliefs. Leon Festinger, who first proposed the theory, states cognitive dissonance is concerned with an incompatibility in the relationship between two cognitions.[27] Festinger believed "that people need to maintain consistency among their beliefs, attitudes, and behavior."[28] Building upon Festinger, Robert Jervis in his book *Perception and Misperception in International Politics* applies

[27] Leon Festinger, A theory of cognitive dissonance. (Stanford, CA: Stanford University Press, 1957), 4.
[28] Ibid., 4.

cognitive dissonance theory within the context of two parties who are in dissonance: "Two elements are in a dissonant relation if, considering these two alone, the obverse of one element would follow from the other. For example, the information that a Ford is a better car than a Chevrolet is dissonant with the knowledge that I have bought a Chevy."[29] Placed into a joint operations context, the idea that executing operations within the land domain are more effective than operations in the air domain would be dissonant to an Air Force officer, because he/she advocates airpower and vice versa with the Army officer.

Cognitive dissonance theory puts forward two hypotheses. First, "the existence of dissonance, being psychologically uncomfortable, will motivate a person to try to reduce dissonance and achieve consonance in their own mind. Second, when dissonance is present, in addition to trying to reduce it, the person will actively avoid situations and information which would likely increase the dissonance."[30] As a result, both hypotheses point to the belief that people seek strong justification for their behavior while discounting information that contradicts their established norms. Jervis explains:

> People want to minimize internal conflict. This leads them to seek to believe that the reasons for acting or deciding as they did were overwhelming. The person will then rearrange his beliefs so that they provide increased support for his actions. Knowledge of the advantages of rejected courses of action and costs of the chosen one will be a source of uncomfortable dissonance that he will try to reduce. To do this he will alter his earlier opinions, seeing more drawbacks and fewer advantages in the policies he rejected and more good points and fewer bad ones in the policy he adopted. He may, for example, come to believe that the rejected policy would not satisfy certain criteria that he originally thought it would, or that the chosen policy will not cost as much as he thought. The person may also search out additional

[29] Robert Jervis, *Perception and Misperception in International Politics*. (Princeton, NJ: Princeton University Press, 1976), 382.
[30] Festinger, 13,31.

> information supporting his decisions and find new reasons for acting as he did and will avoid, distort, or derogate new dissonant information. If doubts nevertheless creep in, he will redouble his efforts to justify his decision.[31]

In addition, Cognitive Dissonance Theory states that individuals will reduce dissonance by downgrading discrepant information or avoiding it altogether as they seek to find information that is consonant with their perception. In essence, the individual uses selective exposure to justify his/her position and downgrade the counter argument. Jervis again explains:

> Making such a decision will, according to dissonance theory, greatly alter the way a person thinks. Before reaching his decision the individual will seek conflicting information and make some compromise judgment between the information and his existing cognitions or between bits of information inconsistent with each other and with his existing cognitions. But once the person has reached a decision, he is committed and cannot process information and make some compromise judgment. Quite the contrary, the person must minimize the extent to which the evidence pointed in opposite directions.[32]

Although cognitive dissonance theory tries to explain the behavior of an individual, this monograph makes the logical leap that individuals make up military organizations. Therefore, the decisions of military organizations result from the individual making the decision and not the organization itself. Moving beyond parochialism as an explanation, these individuals carry baggage and are "hard wired" based on their career paths. At present, many officers who find themselves in joint environments or situations exhibit cognitive dissonance based on their own misperceptions of how they view the capabilities of the other

[31] Jervis, 383.
[32] Jervis, 384.

services. Following this logic, officers who are knowledgeable about their service capabilities but are lacking in knowledge about another service capability will reduce dissonance by downplaying alternative (i.e., joint) options and enhance their view of a particular decision, usually one rooted in their own services' way of doing things. In today's joint force environment, these decisions include procurement, budgets, operations, and service missions. As long as the services inculcate their officers with only their own service-based knowledge and not of others, cognitive dissonance will always be present and true jointness will never be achieved. Thus, cognitive dissonance theory shows how perception and misperception affect jointness.

Contradicting cognitions become catalysts that enable individuals to acquire or invent new beliefs or to modify existing beliefs. People do this to reduce the amount of dissonance between cognitions and bring them back into a consistent relationship. The goal of any strategy to reduce cognitive dissonance includes measures to provide some semblance of objectivity. The reduction of cognitive dissonance can occur from following two strategies. Dissonant cognitions can be eliminated or consonant cognitions can be added. Success arises from using either approach individually or as a complement to each other. For the purposes of this monograph, the elimination of dissonant cognitions is the preferred mechanism.

Operation Allied Force (OAF) provides an excellent example where cognitive dissonance occurred. The objective of OAF in 1999 was to "degrade and damage the military and security structure that President Milosevic (Yugoslav President) has used to depopulate and destroy the Albanian majority in Kosovo."[33] General Wesley Clark as Supreme Allied Commander Europe (SACEUR) assumed command of NATO forces charged with conducting operations in the battlespace. Lieutenant

[33] US Department of Defense, "Operation Allied Force" accessed 14 April 2010. http://www.defense.gov/specials/kosovo/

General Michael Short, the Coalition Force Air Component Commander (CFACC) under General Clark, assumed command of a large air armada that encompassed 927 aircraft from the United States and NATO countries. Disagreement over the "center of gravity" (COG) created unnecessary tension between the two commanders.[34] General Clark believed Serbian fielded forces were the center of gravity and directed Lt Gen Short to prioritize airpower against them. Lt Gen Short disagreed with his boss over this decision stating that Serbian leadership was the center of gravity. Lt Gen Short stated after OAF, "I never felt that the Serb Third Army in Kosovo was a center of gravity."[35] In Short's mind "Milosevic had written the 3rd Army off and body bags coming home from Kosovo didn't bother Milosevic and it didn't bother the leadership elite in Belgrade."[36] This was dissonant with General Clark. Clark's first priority "which he expresses every day on video teleconferences was the fielded forces in Kosovo."[37]

History and scholars still debate over which approach was right. In the end, both senior commanders displayed cognitive dissonance with the other based on their understanding of warfare and their preconceptions built over a lifetime of experience in their areas of expertise. General Clark was a career Army Officer while Lt Gen Short was from the Air Force. Lt Gen Short did follow his Boss' guidance to attack fielded forces but only reluctantly. Eventually, said Short, "we the airmen of the Alliance, were able to convince General Clark that we should conduct sustained and parallel operations with airpower we had

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[34] Center of gravity is a Clausewitzian term that implies the "hub of all power" for a specific nation state. The US military usage of the term is a key component of the strategy that is used and sets the emphasis for weight of effort and resource allocation priorities.

[35] John Tirpak, “Washington Watch: Short’s View of the Air Campaign,” Air Force Magazine, September 1999. http://www.airforce-magazine.com/ MagazineArchive/Pages/ 1999/September%201999/ 0999watch.aspx accessed 14 April 2010.

[36] Ibid.

[37] Ibid.

available to us…that we could continue to attack that army in Kosovo while attacking other more lucrative and compelling targets in Serbia proper."[38] This statement informs us that objectivity and reason eventually convinced General Clark to change his view on airpower's focus ultimately giving way to mission effectiveness and the end of the conflict.

How do we decrease dissonance in individuals to allow them to process competing viewpoints? In order to accomplish this task, individuals must possess the requisite knowledge for this cognitive processing to occur. This knowledge is based on perception or the insight, intuition, and knowledge gained from direct observation or acute cognitive analysis. Direct observation and acute cognitive analysis are the mechanisms to facilitate this learning. If a person perceives something as "true" from their own insight, intuition, or knowledge, they will hold that belief to be true based on direct observation and learning. If a person misperceived what he or she saw or worse yet never experienced something to begin with, then it would make sense that both examples would be dissonant to their initial misperception thus creating the conditions for cognitive dissonance. Reducing these conditions by exposing officers to the capabilities of each service through direct exposure is key. To reduce cognitive dissonance while developing joint-mindedness, the officer must see, smell, and breathe the environment of the sister service; otherwise he cannot arrive at a common perception with that individual from a different service working together in a joint environment.

Experiential learning theory provides a means to reduce dissonance by creating situations where individuals experience unfamiliar stimuli firsthand in an environment. The legislative solution to jointness is bringing the services under one joint umbrella and forcing

[38] Ibid.

its members to conform to joint standards, joint qualifications, and joint doctrine. This approach takes an organizational and cultural focus while largely overlooking the individual officer; it fails to understand that problems with jointness arise from misperception that leads to misunderstanding. Until an officer can experience each of the other service environments individually, he may never be able to grasp the objectivity demanded of joint-mindedness collectively. For this to be effective, each individual needs the experience of actually seeing the other services in action unencumbered by collective approaches. The focus should be to meld perceptions based on how the airman, sailor, soldier, or marine sees the world from their respective lens. This orientation change from a joint collective approach to an individual service focused approach initially which is then followed by a joint approach allows the individual to formulate the perception of his/her experience and calculate similarities and differences with the perceptions he currently holds. Furthermore, joint-minded individuals understand that each service acts rationally in its approach to mission effectiveness. The joint-minded officer understands the rational approach of each service, because he has experienced it firsthand and then analyzes objectively the merits of each service's capability.

Experiential Learning Theory (ELT) is "a four staged cyclical holistic theory of learning that combines experience, perception, cognition, and behavior."[39] The four stage cyclical process shows how experience "is translated through reflection into concepts, which in turn are used as guides for active participation and the choice of new experiences."[40] These four stages are concrete experience, observation and reflection, forming abstract concepts, and testing in new situations. First, concrete experience (CE) is the location the individual actively

[39] David Kolb. *Experiential Learning: Experience as the Source of Learning and Development*. (Englewood Cliffs, NJ: Prentice Hall Inc., 1984), 24.
[40] Experiential Learning (Kolb) Summary, http://www.learning-theories.com/experiential-learning-kolb.html

experiences the desired context. Second, the individual begins reflective observation (RO). During RO, the learner reflects on what he/she has seen and experienced. The third stage is abstract conceptualization (AC). During AC, the individual begins to conceptualize a theory or model of what he/she observes. Finally, active experimentation occurs (AE). During AE, the individual begins "developing concepts to test the model or theory or plan for a forthcoming experience."[41]

ELT provides a mechanism to reduce cognitive dissonance through direct experience with dissonant ideas. If an Air Force officer is dissonant about the aspects of land warfare from an Army or Marine Corps lens, then the only way to reduce this dissonance is to expose him to what service specific ground maneuver warfare looks, smells, and feels like. If an Army officer cannot grasp the unique intricacies of naval warfare, then put him on an aircraft carrier during flight operations or a cruiser during a fleet exercise. Common perceptions form from direct experience. In this situation, the Navy officer and Army officer will have cognitive symmetry. Once these common perceptions form, an individual begins to approach military operations objectively without service biases and ultimately moves closer to the end-state of all officers in the US armed forces: joint-mindedness.

Schema Theory and the Context Element

Thus far, both “P”s in the P2C have been addressed. The first “P” (perspective) is often blocked by the fact that individual officers often possess stereotypes, which form initial barriers against thinking and acting jointly. To combat these stereotypes, Allport's contact hypothesis offers important insights into how these stereotypes may be broken or ultimately not formed in the first place. The second “P” (perception) builds upon the first. Stereotyped perspectives form dissonant

[41] Ibid.

perceptions. Because of these stereotypes, when an officer finds himself/herself in a joint operating environment, when dealing with those from other services, this officer may encounter situations that run counter to preformed perspectives. To make sense of this cognitive dissonance, the officer will more than likely fall back on his/her own standard service perspective. Experiential learning theory suggests that these perceptions may be altered by exposing an officer to sister services and their consequent ways of doing things before this individual faces a joint situation "in the real world."

When stereotypes are left unchecked to form the basis of the individual's perspective and perceptions are dominated by individual service solutions and not by joint ones (as is often currently the case), than the officer will attempt to change the context to fit his/her perspective and perception. Context, thus, forms the "C" and final aspect of the P2C framework.

To understand how context interacts with one's perspective and perceptions, we turn to schema theory, which situates context within the proposed P2C framework. Howard Belote wrote that: "Human beings, according to behavioral and cognitive scientists, truly understand only what they have lived and tend to discount everything else. This follows that ground officers identify with their ground experience and generally reject the notion that any other perspective could be equally valid."[42] This is not unique to soldiers but applies to other service officers as well. This creates dissonance due to a lack of experience in the other party's expertise. In short, parties on either side miss out because they lack a common understanding or frame of reference. Officers must look past schemas and dissonance to arrive at objectivity in order to make

[42] Howard Belote, " Once in a Blue Moon: Airmen in Theater Command," (Master's Thesis, School of Advanced Air and Space Studies, 1999), 110. Quote made in reference to Yuen Khong, *Analogies at War: Korea, Munich, Dien Bien Phu, and the Vietnam Decisions of 1965*. (Princeton, NJ: Princeton University Press, 1992).

decisions based on consistency and effectiveness. Schema theory provides the context explanation for P2C.

According to the theory, all individuals possess categorical rules or scripts they use to interpret the world. Mental rules process and categorize new information. These rules are collectively called a schema.[43] People use schemas to interpret information based on experience and subjective judgments. Experience and cognitive processes shape each individual's schema.[44] Information that does not fit into these schemas runs the risk of elimination due to the lack of processing ability. People alter the context of a situation because their schema cannot process the new information that is available to them thus altering the meaning of the context in their mind. This alteration invites misunderstanding and misinterpretation. It follows that nonexistent schemas for a given context make it difficult for individuals to interpret information in a specific way due to a lack of experience or exposure. Furthermore, individual officers within each of the services develop schemas that support their mission, but in many instances, they lack joint components, which make it difficult or impossible for the officers to interpret contexts relating to jointness due to a lack of joint experience or knowledge. Joint doctrine is not enough to overcome this inertia because service officers lack the capability to place joint schemas into the proper context as this doctrine cannot overcome years of highly developed perspectives and perceptions.

Just as Allport's contact hypothesis offers guidance to overcome stereotyping that affects the perspective element and cognitive dissonance theory provides an avenue to overcome the strongly-held service perspectives that in part make up the perception element, schema theory allows the careful observer to understand the context in

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[43] Sharon Windmayer, "Schema Theory: An Introduction," Working Paper. George Mason University. http://www2.yk.psu.edu/ ~jlg18/506/ SchemaTheory.pdf (accessed 13 Jan 2010).
[44] Ibid., 2.

which members of all services operate. The process described by schema theory is that learners acquire knowledge in three stages. These three stages are accretation, tuning, and restructuring. According to Sharon Windmayer, "… in accretation, learners take the new input and assimilate it into their existing schema without making changes to the overall schema. Tuning is when learners realize that their existing schema is inadequate for the new knowledge and modify their existing schema accordingly. Restructuring is the process of creating a new schema addressing the inconsistencies between the old schema and the newly acquired information."[45] This process implies there is a catalyst or opportunity that begins the change. Without a catalyst or opportunity to learn a joint schema, individuals will persist with existing beliefs and never restructure from service specific contexts to joint contexts. In the context of jointness, the catalyst is the "mission". The Joint Environment Opportunities (JEO)—explained in Chapter 4—will be used to identify and analyze this "mission".

Schema theory illustrates how the final component of the P2C framework (i.e., context) intimately relates to an individual's perception and perspective. More importantly, schema theory shows how jointness can never occur if an individual is never given the opportunity to develop joint schemas. The development of joint schemas is the context element of the P2C framework. Joint schemas directly relate to the concept of joint mindedness. Joint schemas refer to bodies of knowledge that relate to the perspectives, perceptions, and context of all warfighting domain expertise, including land, sea, air, cyber, and space schemas. These joint schemas are not based on a single-service orientation. Instead, they are based on the individual nuances and requirements of each

[45] Sharon Windmayer, "Schema Theory: An Introduction," Working Paper. George Mason University. http://www2.yk.psu.edu/~jlg18/506/SchemaTheory.pdf (accessed 13 Jan 2010).

domain. Understanding joint schemas as warfighting domain context gives the proper context to the logic and rationality of jointness. Developing opportunities to learn joint schemas are important so that an individual can inculcate these new bodies of knowledge within his own cognitive processes. If joint schemas are not present, jointness becomes elusive. Joint schemas are the final requirement to develop joint-mindedness.

To conclude, the P2C framework is key to understanding and creating joint-mindedness through cognitive symmetry, which—in turn—is the foundation of successful jointness. Until this point, the separate components of the framework have been discussed without reference to the others. Individually, they shed light as well as provide possible solutions to various problems associated with jointness. However, their real strength comes from their interaction. In synthesizing them, the framework resembles a hierarchy moving from one level to the next. At the top is context, which ideally should incorporate joint schemas. Joint schemas represent joint methods, the way in which a true joint-minded officer would operate in a joint military environment. As such, they represent the highest state of joint competency. Perception lies immediately below context. To reach the top level, an individual must have common perceptions with members of the other services. He understands his expertise while concurrently understanding the perceptions of other service members. He understands them because he experienced them firsthand. Perspective is the foundational level. If an officer lacks perspective primarily, he/she cannot progress to perception or to the ultimate goal of context. To achieve joint mindedness, P2C symmetry begins at perspective, progresses through perception, and finishes with context.

The Benefits of Joint Mindedness

It might be necessary to dispel one myth at this point. A joint-minded officer does not turn his/her back on the service of which he/she is a member. Joint-minded officers are always the quintessential advocates for their area of expertise because they are *allowed* to be by other joint-minded officers. They approach problems with objectivity and propose rational solutions. Objectivity refers to judgments based on observable phenomena and uninfluenced by emotions or personal prejudices.[46] Viewing the problem through an objective lens, joint-minded officers make choices that are rational; the quality of being consistent with or based in logic.[47] There is an expectation from all of the members in the group that each joint-minded officer brings this rationality to the joint table. Service individuals first must have the technical and tactical competence of their own specialty in order to be joint minded. The true nature of joint mindedness requires the expertise and experience of each individual in a two-way relationship between the individual's expertise and the required interface with jointness. This enables the interplay between disparate knowledge bases and capabilities to arrive at the best solution to a given problem set. This interplay is possible because the other members of the group have an expectation the joint-minded officer will view the situation objectively and decide rationally what the optimum solution is.

An inherent contradiction exists that supports the counterargument. This position argues that each service should develop its officers to possess the skill required to perform individual service specific skills and those alone. The logic underlines the belief that jointness occurs due to the overwhelming capabilities of each service and

[46] http://wordnetweb.princeton.edu/perl/webwn?s=objectivity

[47] Ibid., Rationality in this context does not relate to state behavior and decision making in international crises. Rationality in this context pertains to the expectation that other joint minded individuals will have that you will act in the best interest of the accomplishment of the mission, maximizing benefits while minimizing costs. The benefits and costs relate directly to the collective and are not influenced by ulterior motives such as service interests.

the abilities of its officers to translate that capability in the joint arena. The “purple kool aid” analogy illustrates this approach. In this analogy, each of the services brings a specific flavor signified by a specific color to the “kool aid” mixture. The Air Force brings blue, the Army brings green and so forth. Each color represents the capability of each service with purple signifying jointness. Users of this analogy argue that purple requires each of the services to bring their truest color. This true color is analogous to the capabilities and expertise of each service, the number one requirement for joint mindedness.[48] Taking this analogy one step further, proponents state the colors mix into a homogeneous mixture that enables the synergy required of joint operations. Although this seems simple enough, "mixing" often does not occur due to psychological factors such as cognitive dissonance, stereotypic behavior, and schemas. In fact, when the services bring their true capabilities together, there is no overlap due to an asymmetric P2C framework and a lack of a common frame of reference. In fact, not only is there no overlap, there are significant gaps or seams between individual service expertise, competency, and capabilities. Figure 2 shows the analogy of joint knowledge seams.

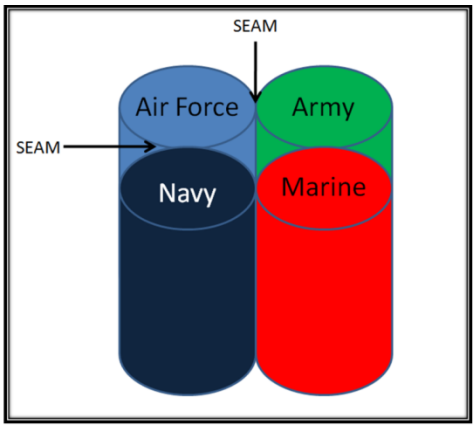

Figure 2: Joint Knowledge Seams

Source: Author's Original Work

[48] The first assumption to any discussion of jointness is individual service competence.

In order to use the capabilities of each service within a joint operation, services must develop seam knowledge to translate their capabilities to each other. Joint-minded officers have their own service expertise (the cylinders in the diagram) but can operate in any of the seams to facilitate common understanding. Seam knowledge helps bridge the gap between service capabilities by answering the following four questions. First, what are the fundamental backgrounds and concepts of the other services' doctrine? Second, why do the other services conduct operations in the manner they do and what significant events shaped these perceptions? Third, what are the major limitations to these approaches and why are these perspectives unique? Fourth, what are the major benefits to these approaches given the established context? This diagram illustrates the potential difficulty and dilemma of jointness. In order to be joint does one have to understand the knowledge represented by each of the cylinders? Fortunately, the answer is no. Joint-minded officers learn to operate within the seams to provide a common understanding. The joint-minded officer knows the seam knowledge for each of the other services and adopts a comprehensive approach to military problems. In the language of the P2C framework, seam knowledge provides the ability to translate perceptions and perspectives within the right context. Seam knowledge enables the practical manifestation of joint-mindedness.

Three elements facilitate cognitive symmetry, which is essential in the development of joint-mindedness. The first and foundational component is perspective; without it, an officer cannot progress past his/her own service outlook. Gordon Allport's contact hypothesis provides an understanding of the requirements to reduce stereotypes. Allport's four conditions, heretofore called the perspective element,

represent ideal conditions to reduce stereotyping and are the first steps in the development of joint-mindedness.

Contact episodes in the form of JEOs provide mechanisms to reduce stereotypes and facilitate progress towards the next level of the hierarchy, perception. Establishing common perceptions through direct experience and exposure to other service capabilities reinforces common perceptions between different service officers. This environmental exposure, represented as the perception element or second "P" of P2C, reduces cognitive dissonance among individuals and promotes objectivity with the added expectation of rationality among joint minded individuals.

The final level is context. Context exists in the form of joint schemas, which are fundamental to the issue of jointness and expertise in joint matters. These schemas enable the proper context for joint mindedness. Furthermore, mechanisms must be in place to facilitate the development of joint schemas in order to think in a joint context. Without joint schemas, this becomes very difficult and problematic.

The P2C framework is the foundation for a sound joint working relationship between two individuals from two different services. Ideal situations arise from P2C symmetry. This symmetry occurs from three indicators. First, individuals share the same perspective. This does not imply complete agreement between two people who might share different opinions about the same problem. There will be disagreement and discourse that results, but the participants expect objectivity bounded by rationality. They will have a shared understanding of their capabilities as manifested in seam knowledge. Second, individuals understand the perceptions inherent in the exchange. Each person looks to correct misperceptions. Third, both individuals understand the contextual factors at play. They do this from a common frame of reference.

Contrary to the three listed positive aspects of P2C symmetry, asymmetry can occur. Individuals exhibit cognitive dissonance because they do not have a shared perspective or are unable to understand the

other individual's perspective. In an asymmetric condition, the situation is rife with misperceptions. Both individuals cannot recognize these and barriers result. Finally, both individuals cannot understand each other because they do not have a common frame of reference. They are unable to establish the context of the situation. Achieving jointness is a problem and will continue to be a problem because the services are rife with asymmetries. Joint-mindedness addresses the problem at its core and is the foundation from which to build a joint force that shares perspectives, perceptions, and context to operate effectively.

Chapter 2

The Joint Qualification System

As capable as our joint forces are today, this will not be enough to meet future challenges as described in this concept. We will need to develop new capabilities and change the capacities of existing ones. We will need to create new joint and Service doctrine, tactics, techniques and procedures. We will need to establish new methods for integrating our actions, both internally and with partners. We will need to select, educate, train, equip and manage our people differently. We will need to envision and create new organizations. We will need to develop new technologies and adapt existing ones to new missions.

-- Admiral Mike Mullen, CJCS 2009

The US Department of Defense currently uses the Joint Qualification System (JQS) to facilitate jointness. The JQS includes the Joint Officer Management Program, joint education, joint training, and joint experience. A system is defined as a group of interdependent components that form a unified whole. We are "dealing with a system when (a) a set of units or elements is interconnected so that changes in some elements or their relations produce changes in other parts of the system, and (b) the entire system exhibits properties and behaviors that are different from those parts."[1] The current joint system is an "open" system where "it interacts and exchanges with its environment, presenting import and export, building up and breaking down of its material components."[2] This is in contrast to a closed system where the

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[1] Robert Jervis, *System Effects: Complexity in Political and Social Life*. (Princeton, NJ: Princeton University Press, 1997), 6.
[2] Ludwig Bertalanffy, *General System Theory: Foundations, Development, Applications*. (New York, NY: George Braziller, Inc., 1969), 38.

material components remain isolated from its environment. This open system takes inputs based on experience from individuals, legislation, and formal institutions. The supposed output of the system is jointness in the form of individuals who can think and operate in joint environments. The formal title of these individuals is joint qualified officer (JQO). The JQO is the focused output of the system as mandated by law.

The inherent goal of the joint system is the production of joint-minded individuals. Due to the unique requirements of developing joint-mindedness as stated in the previous chapter, the current system places emphasis on joint experience versus joint mindedness, making the unsupported assumption that joint experience leads to joint mindedness. Experience in joint matters does not mean that an individual will be joint minded. If this were the case, then we would not have any problems concerning joint matters because in theory all of our services' general officers are required to have joint experience before they reach the rank of O-7. Furthermore, the current Joint Qualification System is inadequate to produce joint-minded officers in the DOD because it uses a linear approach. A systems approach is necessary because it enables an analysis of each individual component as it relates to the whole. Furthermore, the component analysis enables an analysis of how those components contribute to the system output and if that output is adequate. In order to proceed, the chapter defines and analyzes the system components.

The JQO qualification is an adaptation from the Joint Specialty Officer (JSO) designation in existence prior to 2007.[3] Within the context of the JSO designation during the JPME debates, one retired Army general stated that a JSO "has in depth, expert knowledge of their own service, some knowledge of other services, experience operating with

[3] Department of Defense Instruction (DODI) 1300.19, DOD Joint Officer Management Program, Change 2, 16 February, 2010

other services, and the mutual trust and confidence in the other services."[4] This preliminary joint officer endstate appears reasonable at first glance, but several questions arise. First, at what point in a person's career does he/she possess in depth expert knowledge of his/her own service? Is this at the tactical level only or does it imply expertise at all three levels of war? At what point should joint familiarization be introduced? Second, what is "some knowledge of other services"? Is this warfighting operations knowledge, service doctrine knowledge, or joint staff knowledge? Third, how does one develop mutual trust and confidence in the other services? Let us address each of these questions in turn.

Today's operating environment is busy. Operations in Iraq and Afghanistan have elevated the operations tempo in all of the services. In addition to war service, the demands of an officer who wants to progress through the ranks requires additional investments in such endeavors as education and command. Furthermore, the increasing pace of technological development requires the officer corps to invest more time learning the resultant environment of such advancements. There is a paradox in this relationship. People see technology as making warfighting operations easier. Full motion video of Predator drones attacking terrorists looks similar to the latest home video game system, for example. To the contrary, the reality is that these systems require much training, education, and mental capacity as they provide much more information to the commander while requiring him/her to react that much faster to the resultant dynamic situation on the battlefield. Developing this expertise occurs over many years. Although this example originates from the US Air Force, the other services face the

[4] House Committee on Armed Services, *Panel on Military Education. Report of the Panel on Military Education,* 100th Congress, 1 sess., 21 Apr 1989, 55.

same dilemma.[5] Developing expertise in one's core competency requires much experience, time, and effort.

Tactical level competence is similar to a bachelor's degree. This step requires technical and tactical competence in one's primary job. Each service judges individuals based on the competency displayed while performing his/her mission. Understanding one's service mission at the tactical level is the first step in developing expert knowledge in one's service. The next step is the operational level of war, the "master's degree" of one's military career. This level requires different service expertise and different and unique thought patterns, requiring deliberate reasoning, analysis, and synthesis of concepts. Unfortunately, as Barry Watts observes: "Tactical competence does not necessarily translate into operational or strategic competence."[6] Finally, the strategic level and its interface with the national instruments of power are no less important than the previous two steps. The strategic level is equivalent to a "doctorate" education. In sum, all three levels require service expertise, which are different in nature. If this is the case, how can a US officer possibly become an expert in his/her own service when he/she is required to also fill mandated joint requirements as a joint officer? In the end, the approach develops "jacks of all trades, and masters of none."

According to the current system, an officer learns a bit of the background, perspective, force structure, and capabilities of the other services. However, this begs the question: Exactly what is "some knowledge of other services"? How much knowledge is enough? Is one course at an intermediate service school enough to have the requisite

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[5] The following example pertains to the Army and is independent of technology. The example represents the dilemma of training for a full portfolio of capabilities. The US Army trains to conduct full spectrum operations. Full spectrum operations represent combat operations as well as stability operations. Training for one does not support training for the other. It makes it difficult for the Army to train and be good at one thing. They must be good at everything.

[6] Barry Watts, *US Combat Training, Operational Art, and Strategic Competence: Problems and Opportunities.* Strategy for the Long Haul Series. (Washington, DC: Center for Strategic and Budgetary Assessments, 2008), 36.

knowledge of the other services? Furthermore, should an officer have knowledge of one service or of all services? Arriving at this question highlights the dilemma in joint education. How do we develop individuals to possess this knowledge and what should they learn? If they are too busy learning the complex nature of their service specific expertise, then what should the DOD put forward as the mechanism to develop this knowledge base? Experience is often higlighted as the prime factor to develop jointness but the opportunities to gain these joint experiences are limited. Do we educate USAF and USN officers on the intricacies of ground maneuver using light infantry? Does the Army major need to know the specifics of how to conduct a combat air patrol in an access denied environment? Both examples develop cognitive symmetry between officers by emphasizing all elements of the P2C framework and should be required learning.

The final question is the most important of the three. How do you develop mutual trust and confidence in the other services? Trust and confidence run deep, because there is an inference of life dependence between individuals in military operations. People within the same service trust each other to do their job, because they are familiar with each other. They are on the same team. How do you put your life in another person's hands if they are not on the same team? Ideally, the individual should view this team as a "joint team", the components of which are working as one, but this is not always the case. Webster's defines trust as a "firm reliance on the integrity, ability, or character of a person or thing."[7] Additionally, Webster's defines confidence as a faith or belief that one will act in a right, proper, or effective way.[8] Both trust and confidence are deep perceptions and beliefs that people can only learn over time. Despite all of the measures taken to develop trust and

[7] *Webster's Dictionary,* http://www.merriam-webster.com/ (accessed 11 Apr 2010).
[8] *Webster's Dictionary,* http://www.merriam-webster.com/ (accessed 11 Apr 2010).

confidence between services through the creation of JSOs and now JQOs, these issues continue to be a problem.

Three levels of analysis are possible for solving the problem of trust and confidence: systemic, organizational, and individual. Of the three, one emerges as the most critical. The systemic level of analysis looks at the interactions of system components. In the context of this discussion, the system components are the individual services. Each service acts in a specified manner in its interaction with other services and national command authorities. The organizational level of analysis examines each service component individually. The final level of analysis examines the individuals that comprise the organization. The individual level of analysis is the most critical. Opponents to the conclusions listed below state these examples are organizational. However, the author asserts that individuals lead these organizations and are the decision makers, who can begin to make changes that foster trust and confidence.

There is a problem with trust and confidence in operations in Iraq and Afghanistan today. Despite the numerous contributions of airpower to the wars in Iraq and Afghanistan, a perception existed that the USAF was inflexible and not committed to the joint effort prior to 2009. This was due to a lack of confidence and trust in the Air Force way of doing business by ground commanders.[9] Although not stated outright by Army commanders, it was the assumption by senior USAF officers that this was the case.[10] Two examples highlighted this reality in the past couple of years. The first was the perception that the air component commander, who is an Air Force general officer, was not committed to the operations in Iraq and Afghanistan because he was not overseas full time like his other service counterparts. The USAF numbered air force

[9] Senior ranking officers stated these beliefs in a non-attribution academic environment at the School of Advanced Air and Space Studies (SAASS). The information presented is essential for making the author's point about current trust and confidence issues in today's operations.
[10] Ibid.

construct that required the air component commander to have both deployed and stateside responsibilities was the cause. The second dealt with the method by which the USAF controls airpower in theater. Since 2009, the Air Force addressed both issues; however, they linger as divides between the two services, because trust and confidence take time to establish roots.

Prior to the summer of 2009, Ninth Air Force had two distinct responsibilities. One involved state side duties and the other operations in the USCENTCOM AOR. To support both efforts, Ninth Air Force (9AF), located at Shaw Air Force Base, South Carolina was the headquarters for US Air Forces Central (USAFCENT) and served as the air component for a 20-nation area within the USCENTCOM AOR. 9AF also served as an intermediate headquarters under Air Combat Command and was simultaneously responsible for five active-duty flying wings, as well as overseeing the operational readiness of 18 designated units of the Air National Guard and Air Force Reserve.[11] The 9AF commander spent most of his time on the road to oversee this large span of control while maintaining his headquarters stateside. In his stead, a Deputy Coalition Force Air Component Commander (DCFACC) ran operations while deployed overseas to the Combined Air Operations Center (CAOC). Meanwhile, the Army deployed their commanders in Iraq and Afghanistan full time, and in their minds, they were therefore committed to the full time requirements of running operations within their AOs, which did not seem the case with their Air Force counterpart. This was not due to the efforts of the Ninth Air Force commander, but the USAF doctrinal structure in place. This contributed to the perception that the

[11] Armani Lyle, "Air Force officials mull 9th Air Force, AFCENT separation," Air Force Official Website, 22 May 2009. http://www.af.mil/ news/story.asp?id =123150753. (accessed 13 Mar 2010).

USAF was not fully committed, which resulted in a lack of trust and confidence between senior Army and Air Force officers.[12]

In the summer of 2009, the USAF fixed this problem under the direction of the Chief of Staff of the Air Force General Norton Schwartz.[13] The new plan split the two responsibilities and created two separate commands vice one having dual responsibilities. Under the new construct, a three star general would deploy forward full time and command Air Forces Central (AFCENT) while a two star general would serve as the Ninth Air Force commander and remain based at Shaw AFB, SC. According to General Schwartz, "we want to download some of the stateside responsibilities so our three star commander can focus on the fight in Afghanistan and Iraq."[14] This division of labor provides a full time forward based air component commander who can focus "exclusively on the planning and execution of air operations in the CENTCOM AOR."[15] The 9AF commander retains command of stateside commitments, which include five wings and three direct reporting units. General Schwartz stated the USAF would reset to the normal "peacetime" configuration used previously once operations subsided.[16]

The second example where trust and confidence was at issue arose over the way that the USAF provided air support to ground operations. The USAF supports operations in Iraq and Afghanistan with hundreds of sorties each day for close air support, ISR, and airlift. This effort is commanded by a single Commander of Air Force Forces (COMAFFOR) who is also the Combined Force Air Component Commander (CFACC). The COMAFFOR/CFACC controls the air effort from a single combined

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[12] Senior ranking officers stated these beliefs in a non-attribution academic environment at the School of Advanced Air and Space Studies (SAASS). The information presented is essential for making the author's point about current trust and confidence issues in today's operations.
[13] Lyle.
[14] Ibid.
[15] Ibid.
[16] Ibid.

air operations center (CAOC) located at Al Udeid, Qatar. The USAF uses this construct because it has limited resources to meet the high demand for operations across the entire depth of the CENTCOM AOR. Concurrently, there are several Joint Task Forces (JTF) operating in both theaters that require USAF assets to support their operations. The USAF solution to matching the means with the ends is to allocate assets from a central authority, the CAOC. Despite the logic of this argument, there are shortcomings. The result of the USAF's decision to support multiple JTFs with a single COMAFFOR/ JFACC has been significant friction in air-ground integration in the CENTCOM AO.[17]

In 2008, USCENTCOM established an Air Force and Marine Corps Tiger Team (AFMCTT) to investigate air-ground integration. Their findings stated that the "presence of multiple JTFs within CENTCOM supported by a single [Commander, Air Force Forces/JFACC] presented non standard command relationships and ad hoc processes not described in joint doctrine resulting in air strategy that was not fully integrated with the ground perspective, thereby limiting the effectiveness of air-ground integration."[18] In addition, there was a perception that the majority of airpower expertise was held in reserve at the CAOC purposefully. Army units at the brigade level and lower relied on the advice of an Air Force major or captain who could not always guarantee support. "By removing the airmen from the staffs of ground units to a geographically isolated AOC far removed from the integrated planning process, the USAF has effectively validated the perception by ground

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[17] Major Timothy Missler, *The Theater JFACC Construct: Creating Disunity of Command in the CENTCOM AOR.* (Research Paper, Air Command and Staff College, 2009), 3.

[18] Marine Corps Center for Lessons Learned (MCCLL), "2008 Executive Summary of AFMCTT Trip Report to the CENTCOM AOR," https://www.mccll.usmc.mil/ document_repository/ Misc/AF%20Marine%20Trip%20Report-Final%2024%20Mar-CDR-3918.doc (accessed 10 October 2008), 8.

commanders that the USAF is not part of the joint team".[19] The AFMCTT further stated:

> Confusion over the central role [JTFs] have within the CENTCOM Theater of War combined with what some ground commanders view as a less than optimum [JFACC] arrangement, impacts the Air Component's ability to fully integrate airpower with ground operations. Over centralization, without adequate distributed command and control organizations and processes, reduces airpower's representation in strategy and planning. Thus, the Air Component is perceived by some as somewhat isolated, geographically and culturally separated from the JTFs they support. This confusion and the apparent reluctance by some in the Air Component to recognize that they are "supporting" Army-centric CJTFs, was one of the most significant and striking observations from the Tiger Team's visit to the AOR. [20]

In an attempt to address this problem, the Air Force is redefining its ability to collaborate with ground commanders via a new Joint Air to Ground Integration Cell (JAGIC).[21] The Air Force's construct prior to the JAGIC was minimal. The resources available did not meet the needs of the customer. The JAGIC increases expertise and provides more advisement capability to support ground forces. Although not stated outright, these new measures help shape the perception of the USAF by ground forces, enable the development of the ground perspective of USAF officers as well as the air perspective by Army officers, and ensure all parties are working from the same frame of reference (context). Figure 3 shows this new practice.[22]

As stated previously, many questions arise from the initial officer endstate put forth. Each is difficult and hard to answer. It would be

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[19] Missler, 3.
[20] MCCLL, 10.
[21] Lt Gen William Rew, "Operational Flexibility," (briefing, School of Advanced Air and Space Studies, Maxwell AFB, AL, 22 January 2010).
[22] Ibid.

hard to find overwhelming consensus among all of the services about the answers to these questions. Furthermore, how do you "operationalize" these questions and answers into a plan to develop joint-minded officers? The first step is to identify a joint officer endstate. This monograph proposes the following endstate using the P2C framework. The goal of the joint system is to create officers who are joint-minded.

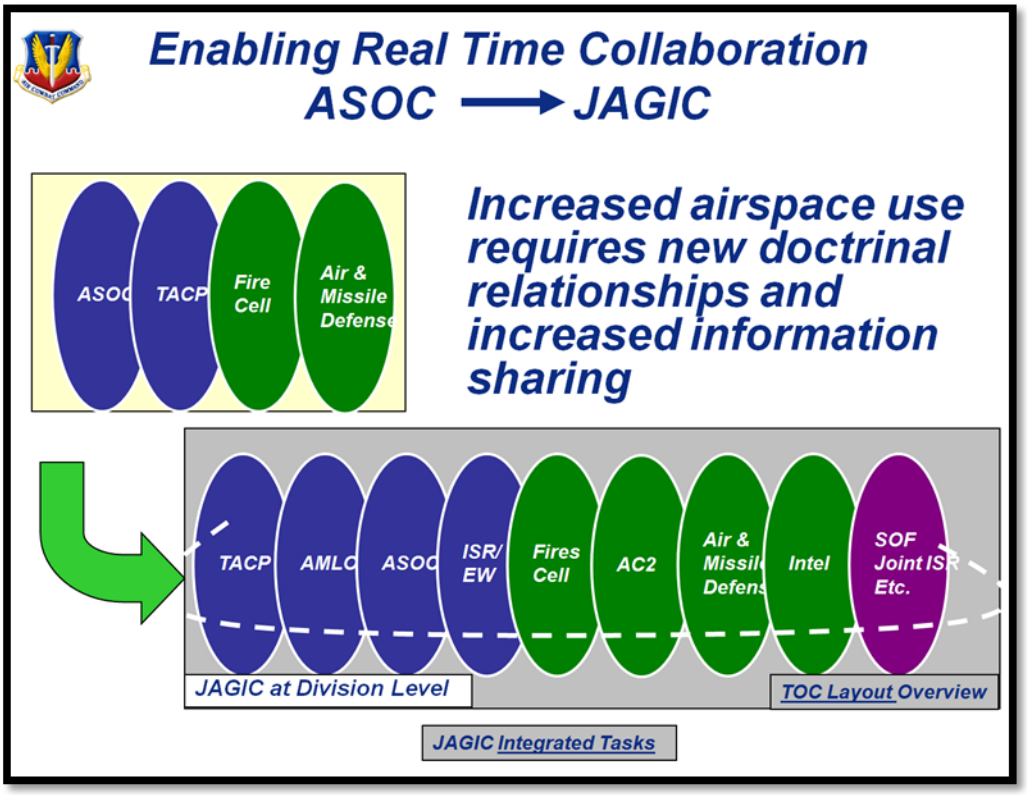

Figure 3: Joint Air to Ground Integration Cell

Source: Taken from Lt Gen William Rew, "Operational Flexibility" briefing given to School of Advanced Air and Space Studies, 22 January 2010.

The system should foster joint- mindedness through the sharing of the perspectives of other service individuals, the perceptions of other services individuals, and the context within which these individuals work and possibly die. The ultimate measure of effectiveness of this approach stems from an individual who can ultimately lead a Joint Task Force or

Combatant Command despite the color of his/her uniform. This individual can think rationally and objectively about the employment of military forces as fostered by joint mindedness. If the world is an uncertain place, the US must be ready to meet that uncertainty with a joint force. It follows that we should start thinking, acting, and training like one.

The Joint Officer Management Program

The Joint Officer Management Program (JOMP) exists to develop officers who are educated, trained, and experienced in joint matters. Joint matters are:

> Matters related to the achievement of unified action by multiple military forces in operations conducted across domains such as land, sea, or air, in space, or in the information environment, including matters relating to national military strategy; strategic planning and contingency planning; command and control of operations under unified command; national security planning with other departments and agencies of the United States; and combined operations with military forces of allied nations. In the context of joint matters, the term "multiple military forces" refers to forces that involve participants from the armed forces and one or more of the following: other departments and agencies of the United States; the military forces or agencies of other countries; non-governmental persons or entities.[23]

Department of Defense Instruction (DODI) 1300.19 establishes the policy that governs the JOMP. The development of joint officers is the primary mechanism to inculcate jointness in the services under this program. The new approach seeks to develop joint officers by using a three-pronged approach. Officers become joint qualified "based on their

[23] Department of Defense Instruction (DODI) 1300.19. DOD *Joint Officer Management Program*, Change 2, 16 February, 2010, 12-13.

achievement and/or completion of education, training, and experience that develop and utilize knowledge, skills, and abilities relevant to the definition of joint matters in chapter 38 of title 10, United States Code."[24] Officers obtain this new rating, called the Joint Qualified Officer (JQO), through progressive levels of joint qualification. These levels are Level I, II, III, and IV. The joint qualification level relies on a point accrual formula that comprises three types of points: joint education, discretionary points, and joint experience points. Officers earn joint education points from the completion of joint PME. Discretionary points may be earned from joint training, joint exercises, and other education that contribute to an officer's expertise in joint matters. Joint experience points are the final points awarded to the formula. Officers gain joint experience from actual on the job exposure. The JOMP delineates this with two categories. The first category is "who" the duty is performed with. The second category is “what” the duty entails. The “who” category includes "multiple military forces that involve participants from the armed forces and one or more of the following: other departments and agencies of the United States, the military force or agencies of other countries, and nongovernmental persons or entities."[25] The “what” category includes "operations conducted across the domains such as land, sea, air, in space, or in the information environment, including matters relating to national military strategy; strategic planning and contingency planning; command and control of operations under unified command; national security planning with other departments and agencies of the United States; and combined operations with military forces of allied nations."[26]

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[24] Department of Defense Instruction (DODI) 1300.19. DOD *Joint Officer Management Program*, Change 2, 16 February, 2010, 2.
[25] Ibid., 30.
[26] Ibid., 30.

LEVEL	CRITERIA
I	a. Awarded upon joint certification of pre-commissioning and basic officer course completion. -- These courses provide learning objectives dealing with "Joint Introduction and Awareness." b. Junior Officers are focused on Service competencies. c. Qualification points begin to accrue following commissioning via opportune joint experiences, joint training, joint exercises, and other education.
II	a. Awarded upon completion of JPME Phase I and accrual of 18 points and certification by the Chairman of the Joint Chiefs of Staff. b. A minimum of 12 points must come from "Joint Experience." c. Discretionary points may be derived from joint experience, joint training, joint exercises, and other education. NOTE: Officers who have Full Joint Tour Credit and have completed JPME Phase I may be nominated by their Service, in accordance with procedures established by the Chairman of the Joint Chiefs of Staff, to be designated as Level II
III	a. Awarded upon completion of JPME Phase II or AJPME (Reserve Component officers) and accrual of a minimum of 36 total points (based on Level II point requirements, normally 18 more points since Level II) or Full Joint Duty Credit, and certification by the Secretary of Defense or his designee. b. Recency requirement: a minimum of 12 points must come from "Joint Experience" ~~since Level II designation~~ *earned in the grade of O-4 or higher*. c. Discretionary points may be derived from joint training, joint exercises, and other education. d. Formal designation: Joint Qualified Officer (JQO). e. Effective 1 Oct 2008, JQO required for appointment as an O-7 (AC Only).
IV G/FO Only	a. Awarded upon completion of CAPSTONE (AC only) and accrual of 24 joint experience points or full joint G/FO credit from an assignment in a G/FO joint billet in OSD/JS/COCOM HQs/JTF HQs, Defense Agency HQs, hold designation as a JQO, and certification by the Secretary of Defense or his designee. b. Officers must be a G/FO (for pay purposes) for at least one day while filling the G/FO S-JDA or during the period for which joint experience points are earned.

Figure 4: Joint Qualification Matrix

Source: Taken from Department of Defense Instruction (DODI) 1300.19. DOD Joint Officer Management Program, Change 2, (16 February, 2010),30.

Joint experiences "may be accrued via a more traditional long term standard joint duty assignment (S-JDA) or brief periods of joint operations. Unique to this system is the opportunity to acknowledge that officers *also* gain expertise in joint matters based on their involvement in joint exercises and other forms of joint training, as well as JPME and other education."[27] Joint experience includes "any staff assignment in OSD, the Joint Staff, COCOM headquarters, Defense Agency headquarters, DOD Field Activities, or Military Department elements of US Government Agencies outside the Department of Defense. This may also include joint experiences gained while assigned to a Service position,

[27] Department of Defense Instruction (DODI) 1300.19. DOD *Joint Officer Management Program*, Change 2, (16 February, 2010),30.

excluding those qualifying experiences in combat."[28] Once an officer gains 24 points (General/Flag officers) or 36 (for O-6 and below), the experience is labeled a "full tour of duty" in accordance with the congressionally mandated tour lengths.

In addition, the program uses a formula that counts joint experience points by three factors that apply to the joint experience in question: duration/frequency, intensity/environment, and type.[29] Duration is purely based on time. The formula calculates duration using 30.4 days as the equivalent of one month.[30] One month equals 1 point. Three variables measure intensity and deal with the environment within which the joint experience takes place. These three variables are combat, non-combat, and steady state. Each of these variables corresponds to a value that is multiplied by the experience points received. Combat experience receives the most value with a multiplier of 3. Non-combat experience receives a value of 2. Examples of non-combat experience include JTF Katrina, tsunami relief, and drug interdiction operations.[31]

Joint training is the second component. Policy defines joint training to include "mission rehearsals of individuals, units, and staffs using joint doctrine or joint tactics, techniques, and procedures to prepare joint forces or joint staffs to respond to strategic, operational, or tactical requirements considered necessary by the Combatant Commanders to execute their assigned or anticipated missions."[32] The definition of joint training for this component is "forces of two or more Military Departments interacting with a combatant command or subordinate joint force commander, and involves joint forces, joint staffs

[28] Ibid., 19.
[29] Ibid., 19.
[30] Ibid., 19.
[31] Ibid., 19.
[32] DODI, 31.

and/or individuals preparing to serve on a joint staff or in a joint organization and is conducted using joint doctrine."[33]

Two additional joint training venues fall under the joint training section. First, individual training courses help develop jointness and are designated by US Joint Forces Command pending certification by the Joint Chiefs of Staff.[34] In addition, distance learning courses are available through the Joint Knowledge Online and will be assigned joint qualification points based on course content and duration. Second, DODI 1300.19 recognizes exercises as an integral part of joint training. In order for classification as such, the CJCS must certify them as an official joint training event. CJCS shall "identify, maintain, and annually publish a list of joint exercises that qualify for the award of joint qualification points. Joint exercises conducted on or after September 11, 2001, will be maintained on the list. Officers will be able to receive qualification points as a participant, planner, or leader in these designated joint exercises."[35] According to DODI 1300.19, joint training encompasses staff mission rehearsals, joint exercises, and joint individual training courses that benefit joint commands solely.

Joint education is the third component. JPME is the only "approved joint education that meets the prerequisite for earning joint qualifications."[36] DODI 1300.19 describes the educational framework for PME.

> PME is the systematic instruction of professionals in subjects that enhance their knowledge of the science and art of war. JPME is comprised of a three-phased approach consisting of a rigorous and thorough instruction and examination of officers of the armed forces in an environment designed to promote a theoretical and practical in depth understanding of joint matters. JPME is a Chairman of the Joint Chiefs of Staff approved body of

[33] Ibid., 31.
[34] Ibid., 31.
[35] Ibid., 31.
[36] Ibid., 32.

> objectives, policies, procedures, and standards supporting JPME requirements for JQO designation. JPME is a shared responsibility of the Military Service colleges and National Defense University (NDU).[37]

Both the old and new programs used a two-phased approach to develop a joint officer in Joint Professional Military Education (JPME). The intermediate service schools provided entry-level joint education about sister-service capabilities, doctrines, and interdependence. This phase is called JPME I and is still used today. JPME II is the second phase. JPME II curriculum teaches national military strategy, joint warfighting capabilities, and campaign planning. Prior to new legislation in 2006, the DOD provided JPME II at two venues: National Defense University (NDU) and the Joint Forces Staff College (JFSC). NDU provides JPME II credit at either the National War College (NWC) or the Industrial College of the Armed Forces (ICAF). JFSC, the second venue, teaches JPME II curriculum in two ways. The first is the Joint Advanced Warfighting School (JAWS). JAWS is a yearlong residency program designed to produce joint and interagency experts.[38] The second way is the Joint and Combined Warfighting School (JCWS). JCWS teaches the JPME II curriculum in ten weeks. In addition to these two traditional venues, new legislation in 2007 mandated that officers can also receive JPME II credit at accredited service war colleges. Currently, the DOD offers JPME II at the NWC, ICAF, service war colleges, JAWS, and JCWS. The aim of this system is to educate officers in joint matters prior to arriving at joint assignments. Figure 5 shows the breakdown of the final point accrual method.[39]

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[37] DODI, 32.
[38] Joint Forces Staff College, *2009 Stakeholders Report*. (Norfolk, VA: Joint Forces Staff College, 2009), 10.
[39] Ibid., 19.

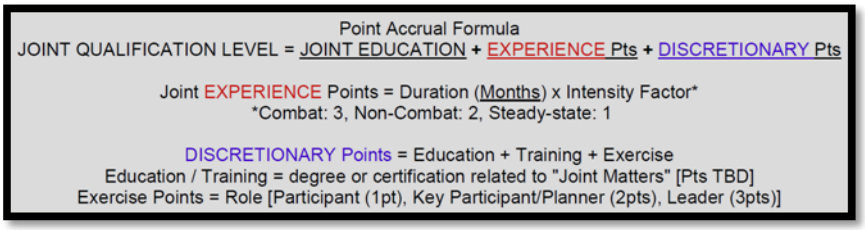

Figure 5: Point Accrual Formula

Source: Taken from Department of Defense Instruction (DODI) 1300.19. DOD Joint Officer Management Program, Change 2, (16 February, 2010),19.

This new program is different from the old one for developing joint officers in two ways. First, the title of the qualification changed. Previously, an officer received the Joint Specialty Officer (JSO) qualification after he/she reached certain benchmarks. Analysis of the title change from "specialty" to "qualified" denotes a subtle reference in perceived ability. Webster's defines specialty as "a state or quality of being special or distinctive."[40] Qualified is defined as having the abilities, qualities or attributes to perform a particular job or task. Under the legacy system, the JSO identifier was an accreditation. The accreditation signified an officer had reached mandatory minimums in order to serve in joint positions. The subtle change in terms from specialty to qualified infers a level of mastery versus just meeting the minimum requirement.

Second, the requirements for joint qualification changed. The focus remains on the individual but places greater emphasis on experience. Under the old system, an officer received the JSO qualification after the completion of JPME II prior to serving an approved joint tour. Joint tours included staff assignments to the Joint Staff, combatant commands, or other Defense Agency headquarters. The new program uses a career path approach that uses levels to show

[40] *Webster's Dictionary,* http://www.merriam-webster.com/ (accessed 10 May 2010).

qualification at basic and advanced levels. Despite the efforts to make the JQS better with this new approach, cracks still exist.

The Government Accounting Office (GAO) conducted a report in 2002 titled *Military Personnel: Joint Officer Development Has Improved, but a Strategic Approach is Needed*. The GAO submitted the report to the Subcommittee on Military Personnel, Committee on Armed Services, House of Representatives to assess DOD's "actions to implement provisions in the law that address the development of officers in joint matters and evaluated impediments affecting DOD's ability to fully respond to provisions in the Goldwater Nichols Act of 1986."[41] The DOD addressed many of the findings in subsequent legislation but two practical matters still exist. According to the Skelton reforms, joint education (specifically) was supposed to educate individuals and qualify them prior their joint assignment. Despite the intentions of this objective, this did not occur due to problems related to real world implementation. Congress fixed this in 2007 by mandating that JPME II was not a prerequisite to serve on a joint staff. As a result, officers arrive at joint staffs without this education and find it difficult to perform their duties. The shift by congress was due to three problems identified by the DOD in reference to JPME II. The following information does not apply to NWC, ICAF, JAWS, or service war colleges. Service war colleges did not have the accreditation to provide JPME II when the GAO submitted this report. The report made the following remarks in reference to the JCWS JPME II course offered at JFSC. Since the majority of the officer population does not attend JAWS due to a small student population or a war college equivalent such as NWC, ICAF, or service war college until the twilight of their career, the 10-week JCWS program is the most likely venue to receive JPME II. JPME II at the JCWS is a critical failure point in the system.

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[41] US GAO to House Subcommittee on Military Personnel, *Military Personnel: Joint Officer Development has improved, but a Strategic Approach is needed* (2002), 1.

The GAO report found three key deficiencies in 2002 with regard to receiving JPME II via the JCWS program.[42] Logistics, timing, and budgeting make it difficult for officers to attend the second phase of the joint education program. First, JFSC accommodates only 300 students in each term.[43] This infrastructure prevents JFSC from receiving all service college graduates to the school thus limiting the number of graduates available who are qualified to serve in joint positions. To increase output, JCWS reduced its curriculum from 3 months to 10 weeks with a change in legislation in 2005.[44] Students fill the classes with an average of three empty seats per class. Second, joint commands cannot afford to let officers attend the JCWS program during their assignment due to the operations tempo and requirements of joint staffs. Third, budget issues prevent officers from attending JCWS due to the assignment of cost for the temporary duty assignment. Although a current GAO report does not exist to support the assertion that these conditions are still affecting attendance, recent joint staff appointees indicate that they are still a problem.[45]

New legislation addresses the first issue somewhat.[46] The addition of service war colleges increases "production" of JPME II attendees. Now, officers have the opportunity to receive JPME II at JCWS, JAWS, NWC, ICAF, and the four service colleges.[47] Did this really fix the problem? The addition of service war colleges educates and qualifies more senior officers who will either continue their careers or retire within a few years. Many of the officers at service war colleges compete for command and

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[42] Ibid., 9.
[43] Glen Jones (Associate Professor, Joint Forces Staff College), interview by author 12 April 2010. The current quota is 255 per class.
[44] Ibid.
[45] Interview with Major Shane Steinke by author, 5 May 2010. Major Steinke works at USCENTCOM in J3.
[46]House. *John Warner National Defense Authorization Act for Fiscal Year 2007*. 109th Cong, 1st sess., 2006. H.R. 5122, 1898.
[47] US Department of Defense. Chairman of the Joint Chiefs of Staff, *Officer Professional Military Education Policy (OPMEP).* CJCSI 1800.01D. (Washington, DC: JCS, 2005), A-A-A-1.

move on to those assignments after graduation. They may never use this education in a joint environment. The change addresses the need for officers to have the JQO designation for General/Flag Officer rank but does not provide for younger officers who will serve on staffs followed by command opportunities where joint relationships and opportunities can be pursued for a longer period of time. It is the O-4 or newly promoted O-5 who receives the real benefit of earlier education and qualification. They can use this new knowledge on any staff, joint or service specific as well as develop joint training opportunities that fall outside of normal channels. Relationships at the tactical level, facilitated by relationships and the desire by younger officers to train jointly, lead to increasing opportunities to experience P2C activities. The measure to include the service war colleges appears to help senior officers fill squares rather than educate younger officers who will benefit longer and provide more "bang for the buck". The system needs to offer JPME II sooner, to more individuals, with more breadth and depth of learning.

Operations in Iraq and Afghanistan as well as security operations in the Pacific indicate joint staffs are busy and need the expertise of their personnel at all times. Due to the occurrence of most assignment cycles, most personnel arrive at new duty locations during the summer. The original intent of the JQS was to send officers prior to their joint assignment. Many times, the assignment incumbent must leave as his/her replacement arrives. Due to the nature of a summer assignment cycle, this would leave a reduction in manpower as the newly assigned officer left for JCWS for 2-3 months. If sending them before their assignment is difficult, then it follows that the officer should attend JCWS during their assignment at the earliest possible convenience. However, this possibility is difficult too. In 2002, the GAO interviewed officers and senior leaders and concluded that their joint commands could not afford to let them go TDY to JFSC to receive the training while assigned to a specific command. Additionally, the report highlighted

remote joint staffs due to the time constraints of losing an officer for 2-3 months of their one-year tour of duty.[48]

The third problem is fiscal. Who funds the officer's attendance to JCWS? Does the officer's service branch or gaining joint command use their money? Does the gaining command want to use its money on someone and take away funding for ongoing resourcing needs? Joint commands believe the services should do this while the services believe the converse. This sounds farfetched, but in 2002, the GAO found this to be the case on the Joint Staff.

> Officers serving on the Joint Staff stated that a former Chairman of the Joint Chiefs had instituted a policy that the Joint Staff would not send officers to the Joint Forces Staff College or any other training lasting more than 30 days after they reported to the Joint Staff for duty. DOD officials confirmed this and explained that the former chairman understood the budget implications and, believing in the importance of joint education, instituted his policy with the expectation that the services would send their officers to the second phase of the education before sending them to their Joint Staff assignments. DOD officials acknowledged, however, that unintended consequences resulted from this policy.[49]

If joint opportunities are difficult due to fiscal constraints, assignment cycles, or changes in legislation, then how can the DOD develop jointness in its officers? The system has several single point failures.

The Joint Qualification System uses accrual formulas and a linear methodology to produce joint qualified officers. By DOD definition, joint qualified officers are experts in joint matters. This linearity involves two propositions concerning systems theory. "First, changes in system output are proportional to changes in input. Second, system outputs corresponding to the sum of x inputs are equal to the sum of the outputs

[48] GAO, 9.
[49] Ibid., 9.

arising from the individual inputs."[50] In other words, the JQO system output depends on that individual meeting the requirements set forth by policy. These requirements (experience, training, and education) are also the system inputs. More exposure to these requirements leads, in theory, to a more qualified joint officer thus enhancing jointness. The converse is also true. If an individual is not exposed to these requirements, then he/she will never be joint qualified. Analysis of the JOMP shows the dependency in the JQS on system inputs to arrive at the desired output. Logically, if these inputs do not exist for an individual then qualification is unobtainable thus reducing the number of joint qualified officers.

The JQS attempts to develop joint qualified officers who can facilitate jointness on joint staffs and within their own service. Despite the best attempts by Congress and the DOD, the linear system design has several single point failures. From analysis, the JQS uses an assembly line to create a product. Some officers will experience this assembly line, but most others will not due to lack of opportunity, lack of desire, or lack of exposure. The officers that do are joint qualified and reported to congress as such. Using these reports, Congress makes the leap that joint qualified officers are joint minded ones. In order for this to occur, each system component must develop cognitive symmetry using the P2C framework. Chapter 4 analyzes each system component and shows the reality behind the JQS approach.

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[50] Alan Beyerchen, "Nonlinear Science and the unfolding of a New Intellectual Vision." Edited by Richard Bjornson and Marylyn Waldman. *Papers in Comparative Studies*, vol. 6. (Columbus, OH: Ohio State University Press, 1989), 32.

Chapter 4

Joint Environment Opportunities

A journey of a thousand miles must begin with a single step.

Lao-tzu

The JOMP uses joint experience, joint education, and joint training to determine an officer's joint qualification level. The JOMP definition for joint experience is too broad because it encompasses both operations and staffwork. In order to analyze the merits of both operations and staffwork separately along with training and education, this chapter uses the author-derived Joint Environment Opportunity (JEO) term to measure the four areas where joint exposure occurs. Four primary joint environment opportunities exist within the DOD: operations, staff work, training, and education. Each of these category labels represents an environment where individuals' careers expose them to joint ideas and learning opportunities. The author purposely omitted doctrine, experience, and self-development from the JEO list.[1] In the end, the author uses the JEO list to grade the performance of the current system and how well it accomplishes its mission of producing joint qualified officers.

The analysis uses the following definitions of each JEO. Operations are actual occurrences where officers use military skills in the pursuit of national security objectives.[2] The operations JEO encompasses both combat and noncombatant activities. Examples of

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[1] Doctrine is an activity and not an environment. Joint doctrine applies to all environments. Experience encompasses all of the JEOs in turn and is the total product of joint learning. Self-development is a method and not an environment. Doctrine, experience, and self-development are all key factors and should not be discounted.

[2] Author's uses this definition for analysis of JEO.

combat operations include Operation Desert Storm, Operation Allied Force, Operation Enduring Freedom, and Operation Iraqi Freedom. The relief of Haiti in 2010 from a devastating earthquake is an example of a noncombatant operation. Staff work is all activities that occur on staffs in joint environments. Examples include the Joint Staff, combatant commands, and sub-unified commands. The author defines training as measures taken to acquire proficiency in specific skill sets that will be applied in real world operational settings. Examples of joint training opportunities are different from those listed in DODI 1300.19 because DOD's definition includes online training courses as a form of training.[3] This analysis does not evaluate online training courses. Although acknowledged as a form of training, this analysis uses exercises as the primary means of comparison. Joint training, in this analysis, includes exercises such as Red Flag and Green Flag, the National Training Center (NTC), the Joint Readiness Training Center (JRTC), Joint Task Force Exercises (JTFEX), and Exercise Terminal Fury. The next JEO is education. For this context, education encompasses the professional military education venues where service officers gain knowledge. PME schools expose officers to joint concepts and relationships with members of the other services. Distance learning PME is not included in this analysis because exposure to other service officers does not occur. Ideally, participation in the four JEOs over a person's career fosters joint mindedness due to the development of cognitive symmetry with officers from every service. Analysis of each shows the system to be imperfect and the means to accomplish it unpredictable.

Although the author evaluates each JEO individually against the merits of the others, an individual's experience may involve all four

[3] DODI 1300.19 uses a different definition of joint training. These types of events are used to prepare joint staffs for real world application. This definition is different because it includes tactical training events that do not use joint staffs because they are more prevalent and useful. They are more useful because the author is trying to back the assertion that joint training in general is difficult to experience let alone the kind of joint training as defined in DOD 1300.19.

JEOs. Realizing it would be optimal for this possibility to occur, the dynamics of each service's career path dynamics make it difficult to undertake any kind of analysis including all four. Ideally, military leaders arrive at senior leadership positions with experience in all four JEOs. In this ideal situation, their service branch and the JQS provided the necessary influence to make this happen. Since it is difficult to examine the motives and the individual service branch personnel practices, the methodology examines each JEO separately.

In an ideal world, an officer gains joint experience from all four JEOs. JEOs provide officers with the necessary experience to develop joint mindedness but opportunity and frequency are limited due to the nature of the JQS as well as the policies and practices of each service. In order to support this assertion, the analysis uses the following methodology. First, the author examines each JEO using the following five criteria: frequency, opportunity, the perception element, the perspective element, and the context element (P2C Framework). The author uses specific definitions for analysis. Frequency is the rate of occurrence that an individual may have to participate in the JEO over his/her career. The second criterion is opportunity. This analysis defines opportunity as the chance the JQS or service allows an officer to participate in the specific JEO.

The remaining three criteria encompass the P2C framework (perspective, perception, and context), which are essential to develop the cognitive symmetry necessary for joint mindedness. Red identifies that the JEO is unlikely to develop the specific P2C element because the effect or element is not present. A yellow rating is somewhat likely to develop the required effect, while green signifies highly likely for a specific JEO. From the analysis, education emerges as the ideal JEO to focus efforts to develop joint mindedness.

After comparison against the five criteria, the author assigns one of three subjective color values. These color values are red, yellow, and

green. The first two categories use the color scheme to grade participation level over a person's career. Specifically, the analysis examines frequency of participation and opportunity for participation. For frequency, the colors are indicative of the frequency of which a person will be able to participate in that specific JEO. Red denotes a low frequency of participation. Yellow denotes a medium frequency. Green denotes a high frequency. There is no specific number correlation of events to denote actual frequency. It is a subjective rating based on the frequency to participate in the specific JEO over an individual's career. The color values for opportunity represent a sliding scale from low opportunity to participate to high opportunity to participate. Red denotes low opportunities, yellow denotes medium opportunities, and green denotes an abundance of opportunities.

Operations

The US military is conducting full-spectrum operations across the entire globe.[4] Since 9/11, the operations tempo is at a level not seen since WWII. The US military is involved in defeating insurgencies in Iraq and Afghanistan while simultaneously conducting large-scale rebuilding efforts in both countries. There are ongoing military operations in Africa, the Balkans, and Haiti. Although not directly engaged in either combat or noncombatant operations, the US continues deploying forces to the Pacific to support potential crises with China and North Korea. In each of these scenarios, the operations tempo exposes service individuals to joint concepts on an unprecedented scale. The soldier witnesses firsthand the nonkinetic ability of ISR as the remotely piloted aircraft passes overhead. In a split second, he also witnesses the awesome kinetic capability of close air support aircraft as an A-10 delivers a

[4] Full-spectrum operations is a term used by the Army to describe those operations that encompass offensive, defensive, and stability operations.

precision weapon on an enemy position that the soldier has identified. Airmen in turn witness the urgency of ground combat operations as they are connected to ground forces during combat operations. No longer sanitized from the battlefield at 30,000 feet, Air Force and Navy personnel are serving alongside the Army and Marines while conducting convoy patrols.

These opportunities are frequent for some and less frequent for others. The current operational environment provides examples. Army forces deploy for 12 months. Air Force forces deploy for 4-6 months. Naval forces deploy for months at a time and the number of months is dependent on the nature of their mission. Each service uses different deployment schedules. The frequency for an individual to participate as a member of a joint force is dependent upon his/her service and the mission the individual performs. In addition, the frequency of participation in joint operations is dependent upon the security environment that may or may not dictate a heavy operations tempo and the stated need that joint forces are required. The high frequency of operations during the past 10 years represents an operational spike. This operational spike provides high frequency during the time period where this tempo exists but lower frequency during times where the operational environment requires less thus making frequency of operational exposure in joint environments unpredictable. The operations category receives a yellow rating for frequency due to tremendous opportunities that exist but are limited due to unpredictability and service policies.

The opportunity to acquire joint experience in the operations JEO is less than optimal for two reasons. First, frequency and opportunity are directly proportional. When opportunity increases, frequency increases and vice versa. This is dependent on the operational environment. In times when the operations tempo is lower, opportunities will be lower. Secondly, there are limited opportunities to do individual

interactions with ***all*** of the elements of the joint force. The opportunity to participate in a joint operation is somewhat likely, but opportunities to interact with each individual service component to develop cognitive symmetry are limited based on the operational need to do so. If there is not an operational need, the chances to interact on an individual basis with every service are low. The operations category receives a red rating for opportunity based on the low likelihood that an individual can interact with ***every*** service and develop the necessary experience required for joint mindedness. Joint mindedness requires opportunities to experience all of the services because for example, operations in the Middle East dominated by the Army are significantly different from the Pacific region where the Navy has the lead.

Operations P2C

The operations category provides unique opportunities to develop the perception, perspective, and context required of joint mindedness. For example at the tactical level, Air Force Tactical Air Control Parties (TACP) operate with Army ground units and share the same operating environment. TACPs develop common perceptions with the ground forces they operate with for mission success. If the opportunity exists, individuals can develop common perceptions based on environmental exposure. In the TACP example, the airman TACP understands the soldier or marine's concerns because he has experienced it firsthand. How does the soldier experience the airman's environment without flying in an aircraft? How does the soldier experience the maritime environment if he does not witness fleet operations firsthand? These opportunities are limited as mentioned previously. The benefit of operations to develop common perceptions is that operations encompass the true nature of how the service operates where individuals see it in its truest form. To see how an Army Brigade Combat Team (BCT) conducts

operations, one can see it either in a sterilized training environment or in an actual operating environment where lives are on the line. This direct experience provides the common perceptions that joint-mindedness requires. For this reason, the operations category receives a green rating because it helps form common perceptions, if given the opportunity.

The operations category meets 2 of 4 of Allport's conditions that are required to develop the perspective element for service officers. First, equal status does not exist. This is inherent in the command relationships during operations manifested in the words supporting or supported. The supported commander is the lead agent to accomplish a specific mission and the supporting commander takes a subordinate role to assist. It follows that the forces under the supporting commander, although important to the effort, are not equal to those of the supported commander. One example of this is the Iraq situation where ground commanders believed air commanders were not doing enough to support their effort.[5] Second, personal interaction does not always occur. There are supporting elements that have personal interaction such as TACPs, but for the sailor to do his job to support the effort, he must be at sea. Additionally, for airpower to be effective, the airman must operate in the air. The remaining two conditions are present. First, cooperative activity is present. The mission is the cooperative activity because it generates mutual dependence and cooperation. Second, individuals recognize authority that is present in the form of a commander who has some level of control at the combatant command level or joint task force level. The operations category receives a yellow rating.

Operations enable the development of joint schemas. These joint schemas are often the result of solutions to mission requirements and help develop the context element of the P2C framework. An example of this is the concept of lessons learned. While conducting operations,

[5] Thom Shanker, "At Odds with Air Force, Army adds its own aviation unit," *New York Times*, 22 June 2008.

lessons learned provide a knowledge base to correct faulty performance in future operations. These lessons learned lead to the development of joint schemas because there is a mission requirement to use the available resources of all services towards the solution of a specific problem. The Center for Army Lessons Learned (CALL) "collects, analyzes, disseminates, integrates, and archives Army and Joint, Interagency, Intergovernmental, and Multinational (JIIM) observations, insights, and lessons (oil), tactics, techniques and procedures (TTP) to support full spectrum operations."[6] Individuals participating in these types of activities understand the contextual element because mission requirements force them to rely on other service knowledge and resources to develop solutions towards common problems. Services translate these lessons learned to applicable joint doctrine that has an effect on larger populations. The key to this exposure for an individual is opportunity. If the opportunity is not present because there is not a mission requirement for the development of a joint schema, then it will not occur.

In the current fight, Army and Air Force integration provided the impetus for many new joint schemas due to the nature of a driving mission requirement. These include the JAGIC concept mentioned previously and the joint counter-improvised explosive device (JCIED) effort. IEDs were causing the highest number of casualties for ground forces. As a result, the DOD established the Joint IED Defeat Organization (JIEDDO) to develop methods to defeat these destructive mechanisms. The JIEDDO "leads DoD actions to rapidly provide Counter Improvised Explosive Device capabilities in support of the Combatant Commanders and to enable the defeat of the IED as a weapon

[6] US Army. Center for Army Lessons Learned (CALL) Mission Statement. http://usacac.army.mil/cac2/call/mission.asp http://usacac.army.mil/cac2/call/mission.asp (accessed 2 May 2010).

of strategic influence."[7] Even though operations provide a fertile ground for joint schema development, individuals may not have the opportunity or be in a position to develop these schemas. This may be due to proximity to the battlefield or their individual occupational specialty. Context receives a yellow rating because it is a fertile ground for joint schema development but the opportunity to develop them is limited due to opportunity and mission requirement.

Staffwork

Staffwork describes those activities where an individual serves as a member of any staff. These include assignments in the Office of the Secretary of Defense, the Joint Staff, Combatant Command headquarters, Defense Agency headquarters, DOD Field Activities, or Military Department elements of US Government Agencies outside the Department of Defense. The staff environment is a unique joint environment opportunity because joint staffs require each service's expertise in order to function properly. For example, the CENTCOM staff oversees operations on the ground as well as in the air. In addition, they are responsible for the maritime security of US interests in the Middle East. The joint staff environment gives an individual the unique experience of operating in a pure joint environment where mission success requires joint interactions that can foster joint-mindedness through cognitive symmetry.

Although working as a member of a joint staff provides excellent experience in developing joint mindedness, the frequency for which an average individual participates as a member of a joint staff throughout his/her career is low. Each service has its own requirements for promotion that involve the development of technical and tactical

[7] Joint IED Defeat Organization (JIEDDO). https://www.jieddo.dod.mil/index.aspx. (accessed 2 May 2010).

competence at the early stages of one's career. Command experience at various levels follows this. The first opportunity for most officers to serve on a joint staff is just after the completion of the intermediate developmental education that occurs at the rank of Major/Lt Commander (O-4). The officer might have the opportunity to serve on a staff but this is dependent on the service. For example, the Army sends the majority of their officers back to an operational unit after completion of this stage of education. This is done to branch qualify the officer as a battalion S3 or battalion XO. "Duty in qualifying assignments is an essential ingredient in the career development of majors prior to promotion to lieutenant colonel."[8] With the branch qualification, "an officer's chance of getting promoted is high but without it they are at extreme risk of not advancing."[9] After Army officers branch qualify, Army majors have an opportunity to pursue a joint staff position but this is dependent on the operational needs of the Army.

The Joint Duty Assignment List (JDAL) contains approximately 1150 Major authorizations. Despite the large number of potential jobs, "the Army being such a large entity has too many Major billets within the Army to fill which is why there is a limited opportunity for every officer to pursue a joint job."[10] This disconnect between the desire to broaden an officer's development and the desired need of the service make it difficult that there is frequency and opportunity available for an officer to serve on a joint staff throughout his career. The chances to serve on a joint staff as an O-5 or O-6 are constrained by similar measures as when they were an O-4. It follows that obtaining joint experience through a joint staff opportunity is less frequent in an individual's career because of the service requirements for competency in their occupational specialty.

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[8] Matthew Smith, "Successfully Developing Joint Leaders," Master's Thesis, Joint Advanced Warfighting School, (2005), 52.
[9] Ibid, 52.
[10] Ibid, 52.

This condition is not unique to the Army; each service has its own requirements. This does not account for those officers who each of the services groom for leadership positions in their own services and are filling a joint staff duty assignment as a prerequisite for general/flag rank. These individuals are in the minority. Most officers will finally have the opportunity to serve on a joint staff in the twilight of their career, but it is often too late to benefit the joint force. Due to the relationship between the two variables of low frequency and opportunity for participation on a joint staff, both frequency and opportunity receive a red rating.

Staffwork P2C

Staffwork works towards the organization's mission and requires the expertise of each service to ensure mission accomplishment. This invokes a level of mutual interdependence that makes the staffwork JEO an ideal joint environment. Despite this mutual interdependence of knowledge, staffwork does not expose the perception element of the P2C framework to individuals. Staff individuals conduct joint activities such as joint campaign planning but at no time have the experience of operating in the other services' environment. For example, individuals at joint staffs provide competent service expertise but are detached from the operating environments where their recommendations occur. The Air Force joint staff officer will have very few if any opportunities to experience the operating environment of an Army maneuver unit or naval fleet. This is not to say there are no opportunities for this to occur, but these opportunities are limited. Combatant commands are geographically separated from overseas operating environments. For example, USCENTCOM maintains a limited forward staff presence.[11] The staffwork category receives a yellow rating due to the limited operational

[11] Major Shane Steinke, interview by author 1 March 2010.

environment exposure that is required to develop common perceptions with other services.

The perspective element is represented well in the staffwork category. All four of Allport's conditions are present. First, officers enjoy equal status as members of a joint staff. Second, cooperative activities are present. Staff members create staff artifacts that support the mission of the joint staff. Third, there is personal interaction between staff members. Fourth, all members of the staff recognize the authority of the joint staff commander. In these four conditions, the perspective element is represented fully and receives a green rating.

Finally, the context element is present due to the nature of the mission of the specific joint staff. Joint staff operational plans, standard operating procedures, and joint mission competencies are joint schemas. Joint staffs require joint schemas to maximize scarce resources to achieve synergistic effects in the their area of responsibility. Officers can develop joint mindedness on a staff if given the opportunity. Finding the opportunity becomes the key.

Training

Frequency and opportunity for training are dependent upon which level of analysis you use. Training occurs at either the strategic, operational, or tactical level, but rarely encompasses all three concurrently. For the purposes of this section, two definitions of joint training are used. The first definition originates in DODI 1300.19 and occurs at the strategic/operational level of war. According to DODI 1300.19 joint training is defined as

> Mission rehearsals of individuals, units, and staffs using joint doctrine or joint tactics, techniques, and procedures to prepare joint forces or joint staffs to respond to strategic, operational, or tactical requirements considered necessary

> by the Combatant Commanders to execute their desired or anticipated missions. Joint training involves forces of two or more Military Departments interacting with a combatant command or subordinate joint force commander, and involves joint forces, joint staffs, and or individuals preparing to serve on a joint staff or in a joint organization and is conducted using joint doctrine.[12]

This definition states that in order for joint training to occur, three components are necessary. These components are joint forces, joint staffs, and joint doctrine. Joint forces encompass two or more military departments. Joint staffs include a combatant command or subordinate joint force commander with their supporting staffs. Joint doctrine is the body of knowledge developed from lessons learned that is the accepted way the joint force operates. The second definition of joint training is less formal. At the tactical level, joint training occurs when two or more services train together. Joint training at this level is usually service sponsored.[13] Training at the strategic and operational levels of war encompasses all of the elements of the DOD definition of joint training. Service-sponsored joint training at the operational and tactical levels, however, do not, because individual service sponsored tactical joint training does not include a joint staff or joint task force command staff while the training is carried out.

The US Pacific Command (USPACOM) sponsored Terminal Fury exercise is an example of a strategic and operationally focused exercise that matches the DODI 1300.19 definition. Terminal Fury is a command post exercise designed "to exercise, evaluate, and improve joint coordination, procedures, plans, and systems necessary for conducting

[12] DODI, 31.

[13] Service sponsorship implies that one service leads the training and provides the main objectives for the training. This is the result primarily of the host service furnishing the training location and the majority of resources due to proximity.

contingency operations on little or no notice."[14] Headquarter elements from USPACOM and service component staffs work a real world simulation of a potential crisis in the Pacific AOR. In 2008, more than 3,000 members of the USPACOM headquarters and its sea, air, and land force components participated in Terminal Fury.[15] Terminal Fury contains all three components under the joint training definition but focuses on the command and employment of forces via the staff. Due to the cost, scope, and effort required, the frequency of these types of exercises is limited. Additionally, the opportunity to participate in an exercise at this level is limited to one's involvement with the command who is sponsoring it.[16]

Tactical exercises are much more frequent but do not fulfill the requirements of the definition of joint training because they lack a joint staff headquarters component. The Army's exercises at its Combat Training Centers are examples of venues where tactical operations are practiced and learned. The Army conducts exercises to facilitate the training of its personnel to perform full-spectrum operations. Full-spectrum operations "is the Army's core idea about how to conduct operations on land—its operational concept. Full spectrum operations entail the application of combat power through the simultaneous and continuous combinations of four elements: offense, defense, stability, and civil support."[17] Exercises take place all over the service, but the Army uses its main training centers that are ideal for this type of training. These centers are called the the Combat Training Centers and

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[14] Julian Gittler, "Terminal Fury will test teamwork in the Pacific," Stars and Stripes Online, 6 December 2005. http://www.stripes.com/article.aspj section= 104&article=33483 (accessed 29 April 2010).
[15] Donna Miles, "Terminal Fury prepares PACOM to confront crisis," Defense News, 6 April 2008. http://www.defense.gov/News/newsarticle.aspx?id=49484 (accessed 29 April 2010).
[16] For example, F-15Es from RAF Lakenheath are less likely to participate in Terminal Fury than are F-15Es from Mountain Home AFB.
[17]US Army. 2008 Posture Statement: Information Papers. US Army website. http://www.army.mil/aps/08/information_papers/transform/Full_Spectrum_ Operations.html (accessed 16 April 2010).

are located at Fort Irwin, California, Fort Polk, Louisiana, and Hoenfels, Germany. The Joint Readiness Training Center (JRTC) located at Fort Polk presents difficult training scenarios to test a Brigade Combat Team (BCT) in its workup towards combat deployment. At the JRTC, a BCT "can train for war in a joint contemporary operational environment with all its personnel, equipment, and supporting Air Force and special operations forces."[18] Although the stated purpose is to prepare Army forces to conduct BCT level preparation with joint forces, the belief among exercise participants is that Army exercises "allow Army officers and soldiers the opportunity to hone their skills while seeing how they integrate into the larger Army. Inherently, Army exercises are not all joint because their focus is on the different branches of the Army exercising together."[19]

The Air Force provides ISR and CAS aircraft to support training exercises at the JRTC. This effort was called Air Warrior but changed to Green Flag in 2006.[20] The Air Force, in its attempt to be more relevant to current operations, transformed the exercise into one "that stresses the integration with Army maneuver units across the broad spectrum of activity, with special emphasis on counterinsurgency and irregular warfare."[21] The Air Force conducts approximately seven Green Flag exercises per fiscal year that support both Fort Irwin and Fort Polk.[22] When Air Force units support Army exercises, Army exercise objectives are superior to those of the Air Force.[23] For example, Army units conduct

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[18] US Army. Joint Readiness Training Center: JRTC Operations Group Mission Statement. http://www.jrtc-polk.army.mil/OPS/INDEX.HTM (accessed 16 April 2010).
[19] LTC William Dolan, interview by Major Matthew Smith October 2005. As quoted in Smith, Matthew. "Successfully Developing Joint Leaders." Master's Thesis, Joint Advanced Warfighting School, (2005), 22.
[20] Tonya Kneebaugh, "Air Warrior transforms to Green Flag," US Air Force Website, 4 October, 2006. http://www.af.mil/news/story.asp?id=123028387 (accessed 10 April 2010).
[21] Ibid.
[22] Ibid.
[23] The author witnessed this firsthand during Green Flag exercises at both the National Training Center and Joint Readiness Training Center. In addition, the author shared

training during the scenarios in support of their objectives. However, if the scenario does not require supporting Air Force assets, these aircraft fly unused over the training scenario. This situation may reflect current operations but the training scenario does not help the Air Force pilot develop his/her skills.

The Air Force also conducts joint training at Nellis AFB, Nevada, during the Red Flag exercise. Red Flag is an exercise designed to simulate the first few days of intense aerial combat for attending aircrews. Red Flag uses scenarios that challenge both joint air forces and coalition air forces in the challenges of working together. During Red Flag missions, Marine and Navy aircraft fly alongside Air Force and coalition partners. Since this is an Air Force sponsored event, the Air Force controls the training objectives. This is done to focus on the development of pilot skills. During the past few years, Red Flag has included a close air support mission area to support training events that focus on the development of aircrews while performing support to ground operations. These training missions include the employment of ordnance, armed reconnaissance, and ISR in support of ground forces. Due to the cost of providing additional Army or Marine ground or rotary aviation units to these scenarios, training suffers from a lack of attendance by these types of forces.[24] Faced with the choice to spend unmandated, unfunded time exercising with air units, ground units would rather focus on core skills training as offered by their specific service. Furthermore, ground commanders expressed the unwillingness to deploy their forces due to the nature of their operations tempo and

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his opinion with other participants who have attended since 2006. They arrived at the conclusions.

[24] The author was an instructor at the USAF Weapons School from 2006-2008 at Nellis AFB. He witnessed these shortfalls directly while looking for assets who supported Red Flag to support Weapons School events. Integration between Air Force air defense assets and US Army Patriot systems is another example. Both services would benefit from this integration, but deployments by Patriot systems to Red Flag or Weapons School are extremely rare.

deployment timelines.[25] The resource argument faces the Air Force too. In 2010, Air Combat Command cut training flying hours by 25% for the combat air forces.[26] Air Force commanders face the same dilemma: Should they use their flying hours to support training that is inadequate for their aircrews or should they support training where aircrews can hone their skills in an environment where the Air Force controls the training objectives?

US Joint Forces Command (USJFCOM) attempts to address these issues by providing additional resources against training requirements. USJFCOM's Joint Warfighting Center (JWFC) "coordinates the military's overall joint training efforts to ensure it is the most advanced and powerful force in the world."[27] The JWFC attempts to accomplish this through three programs. The first program is called the Joint National Training Capability (JNTC). The second is called the Joint Training Coordination Program. The third is called the Training Support Element. JNTC uses an accrediation process to certify training events as joint. JNTC programs evaluate prospective events against a "purple" lens to see if joint tasks are accomplished. JNTC also evaluates prospective training scenarios against what it perceives as the operational environment. Once this subjective determination is made and the event passes, the training program is accredited and JNTC funds are used. The second program is the Joint Coordination Program (JCP). The JCP is designed to match training objectives of one service to the training objectives of another service. The JCP meets once a month and provides additional resources for travel and billeting costs only. No provision is made to fund additional flying hours. The budget for this program is approximately $7.5-10

[25] Author served as Integration Phase Manager for F-15E Division of USAF Weapons School from 2006-2008. These were common reasons given while trying to match training events with sister services. Additionally, instructors at NAS Fallon, Nevada and MAWTS-1, MCAS Yuma experienced the same and had to rely on their individual service training assets to enhance their training.
[26] Lt Col Alan Nilles, interview by author 15 April 2010. Lt Col Nilles is commander of the 336th Fighter Squadron, Seymour Johnson AFB, NC.
[27] USJFCOM, USJFCOM Official Website http://www.jfcom.mil/about/trainer.html

million depending on the year.[28] The third program is called the Support Element. The Support Element provides joint subject matter experts (JSME) to joint training events. JSMEs are retired military officers who act as field agents to help facilitate joint discussions at the training events. In spite of the best efforts of USJFCOM, these measures still don't account for a lack of resources or training objectives oversight.

Training receives a red rating for frequency and opportunity for three reasons. The attendance of joint training, as defined by DODI 1300.19, is limited to those individuals who serve on joint command staffs. Since it is difficult to be assigned to joint staffs (as mentioned previously), it follows that attendance of joint training events, as defined by DODI 1300.19, does not occur frequently over one's career unless one is fortunate to serve on a joint staff. Additionally, the opportunities to attend this type of training are limited. Opportunity is not present if the officer is not on the joint staff. Second, joint training conducted at the tactical level between two or more services occurs more frequently but is heavily dependent on resources. Furthermore, the opportunities to attend these types of training events are higher due to the number of possible events held throughout the year. Attendance of the event is dependent on the service's training objectives. If the attending service has congruent training objectives with the sponsoring service, then both services will conduct tactical training under the auspices of the sponsoring service. If they are not congruent, then joint training will not occur. Third, commanders may opt to forgo a training event based on deployment time away from families and operations tempo. One example related to ops tempo is the reduced number of Red Flag exercises in 2010. Red Flag exercises correspond to Air Expeditionary Force (AEF)

[28] JWFC Staff, interview by the author, 30 March 2010. Although this dollar amount seems adequate, it is not. Typical training deployments require operations and support personnel to conduct training. Billeting costs, per diem costs, airfare, and range usage costs add up to make training events costly. Normal training events for US Air Force training deployments can cost upwards of $250K - $500K per event.

deployment times. These deployment times increased from four months to six months. Since fewer AEFs deploy, fewer Red Flags are required. Frequency and opportunity of joint training are difficult in today's environment.

Training P2C

Joint training events provide the opportunity to interact and form common perceptions. Cognitive dissonance is reduced but not eliminated in these environments because individuals are exposed to alternative service perceptions. The opportunity to experience a different service environment is limited during the training and is dependent upon what level of war the training event focuses on. At the strategic and operational levels, joint training and exercises focus on command related functions and not the environment in which individual services operate. The possibility exists for staffs to experience service specific environmental considerations in the form of wargame simulations. At the tactical level, the opportunity to experience alternative service perceptions is greater. The airman can go to the field with the soldier and see how airpower enhances the ground scheme of maneuver. The soldier can watch the airman's mission tape and experience the considerations of the airman in the cockpit. These types of events are optimal. The bifurcation of effectiveness between training at the different levels of war gives the perception element a yellow rating for the training category.

Due to the difference between different types of training, the perspective element receives a yellow rating. Training participants have equal status at the strategic and operational levels but at the tactical level may not have equal status depending on which service sponsors the training event. In both cases, cooperative activity is present. Personal interaction may occur for both, but is dependent upon the location of

exercise participants. In both examples of joint training, individuals recognize the existence of an authority. At the strategic and operational levels, the authority is the combatant commander. At the tactical level, the authority is the service who sponsors the training. For these reasons, the training category receives a yellow for the perspective element of the P2C framework.

Joint training events are excellent opportunities to develop joint schemas. Staffs exercise and learn joint schemas during joint training exercises and the arguments set forth in the staffwork JEO context discussion hold true for the training category. Furthermore, service individuals actively participate in the development of joint schemas at the tactical level because of the collaborative environment of most joint training exercises. The context element receives a green rating for the training category.

Education

Education provides continuity as a joint environment opportunity. It stretches across the breadth of an officer's career. Professional Military Education (PME) is divided into five levels: precommissioning, primary, intermediate, senior, and general/flag officer.[29] Precommissioning is "military education received at institutions and through programs producing commissioned officers upon graduation."[30] Primary education is received between the grades of O-1 to O-3. Intermediate PME is received when an officer is at the grade of O-4. Senior PME is received when an officer is at the grade of O-5 or O-6. General/Flag officer is self explanatory. As stated in Chapter 3, JPME occurs concurrently with an officer's advancement. The number of joint

[29] US Department of Defense. Chairman of the Joint Chiefs of Staff, *Officer Professional Military Education Policy (OPMEP).* CJCSI 1800.01D. (Washington, DC: JCS, 2005), A-A-A-1.
[30] Ibid., A-A-A-1.

education experiences depends on the length of a person's career as well as an officer's eligibility to attend these schools. Competitive selection boards screen the officer's record as he/she is promoted to determine in residence school eligibility. As an officer progresses into his/her career, competition for attendance at service college increases. Regardless of the intricacies of each service's appointment standards to joint education opportunities, the frequency of joint education throughout an officer's career is moderate. He/she will receive joint education at the beginning and middle of his/her career and during the mature stages of his/her career if selected for senior level education. The education category receives a green rating for frequency.

Opportunity is constant and is affected by three variables. The first variable is the eligibility mentioned previously. Opportunity will decrease as eligibility becomes more difficult. The second variable is the opportunity to attend sister service schools as opposed to an individual's service school at the intermediate and senior level of PME. These opportunities provide additional joint exposure to the individual by providing the officer with an alternative learning environment different from his own. The third variable is the opportunity to attend JPME Phase II. JPME Phase II is taught at NDU schools (NWC, ICAF), JFSC (JAWS, JCWS), and service war colleges. Not all officers will have the opportunity to receive this education. JPME II is designed to prepare officers for serving on joint staffs.[31] Not all officers are required to receive this education because not all officers are required to serve a joint staff assignment. Opportunity receives a yellow for the education category.

Education P2C

Joint professional military (JPME) education focuses on developing joint competency in collaborative leaning environments where students

[31] Ibid., A-A-7.

from all services share ideas towards a common topic. Despite the best efforts of Congress and the DOD, these learning environments provide only two of the three P2C elements. Perspective is present due to the mixing of students from all of the services. The Officer Professional Military Education Policy (OPMEP) written by the Joint Staff for the Chairman dictates student mix requirements depending on the category of school. Class mix at each service intermediate and senior level school "will contain a balanced mix of operational and functional expertise from the two non host Military Departments. Service level colleges shall have no more than 60 percent host Military Department student representation across their student bodies. This percentage is computed by including US military officer, international officers, and civilian enrollments in the student body."[32] Student mix at the joint schools such as JAWS, ICAF, and NWC "must have approximately equal representation from each of the three Military Departments."[33] There is an underlying assumption to this. If the student mix does not reflect equal participation of all the services, then DOD does not consider the venue a joint environment.

PME institutions provide excellent venues for developing the perspective element of P2C. All four of Allport's conditions are present. Students in the seminar groups at PME institutions have equal status, are encouraged to participate equally, and work towards cooperative activity. Curriculum tasks require maximum student participation. Through this cooperative activity personal interaction occurs. Personal interaction counts both inside and outside of the classroom. "When you sit in class, study, eat, exercise, and talk over drinks with members of the other services, that created a camaraderie that didn't always exist," said Commander Donna Hirbayashi in1997.[34] Finally, students

[32] Ibid., B-1, B-2.
[33] Ibid., B-2.
[34] Cheney, 53.

recognize the school's authority. These four factors provide an ideal environment to reduce stereotypes and promote the perspective element of P2C. In addition to student mix, the OPMEP dictates faculty mixes too. At service senior level colleges, "total host Military Department faculty shall be no more than 60 percent of the total military faculty whose primary duty is student instruction of JPME. The mix of the faculty members should be proportionally divided among each non-host Military Department."[35] Perspective receives a green rating because it meets all four of Allport's conditions.

Education also provides the context element of P2C. The JPME curricula aim to teach service officers joint schemas that are beneficial to operate within joint environments. At the intermediate level, JPME 1 teaches the following six subject areas to promote the development of joint schemas: national military capabilities command structure and strategic guidance, joint doctrine and concepts, joint and multinational forces at the operational level of war, joint planning and execution processes, joint command and control, and joint operational leadership.[36] JPME 1 focuses on building awareness of different service cultures while showing the basics of jointness through doctrine and planning constructs. JPME 1 is an inward look at each service that develops context. JPME 2 follows and uses the JPME 1 foundation to address the joint warfare at the strategic level, military strategy, intergovernmental and multinational capabilities.[37] This approach develops the context element of P2C and receives a green rating.

Perception receives a yellow rating because it meets only part of the requirement. Students who attend sister service schools receive the perception element because they can experience the sister service environment first hand. They are immersed in it for a year and are able

[35] DOD OPMEP, B-2.
[36] Ibid., A-A-A-1.
[37] Ibid., A-A-A-1.

to ask questions, formulate theories, and test those theories while attending a sister service school. Students who attend their service school miss this opportunity entirely. There are no ways for the students to experience a sister service environment or witness firsthand the capabilities the sister services provide in an operational setting while in school. Students who attend JFSC get some exposure to the other services through field trips to the fleet anchored at nearby Naval Station Norfolk and aircraft at Langley Air Force Base but this is not a formal part of the curriculum.[38] The system does provide perception elements, but they are limited and not formalized. Due to these reasons, perception receives a yellow rating.

Analysis

Officers have chances to experience jointness frequently in their career but opportunity is dependent on many variables. Joint environment opportunities (JEO) provide experience in four areas: operations, staffwork, training, and education. Each JEO is different, provides different opportunities, and may or may not be frequent. The Joint Qualification System manages officers' careers by qualifying officers who achieve certain milestones, but this approach is incomplete. One way to illustrate this point is through a discussion about measures of performance and measures of effectiveness. Measures of performance (MOP) are typically quantitative in nature and "describe the customer's expectations for a product or project."[39] Examples of MOPs are the number of student graduates from JPME, numbers of officers in joint duty, and mandated student and faculty mix ratios. Measures of

[38] Glen Jones (Associate Professor, Joint Forces Staff College), interview by author 12 April 2010.
[39] Damian Pianta, "Measure of Effectiveness and Measures of Performance." Research paper, The University of Queensland, 2001. http://www.coe-dmha.org/ PKO/Honolulu2007/ References/MoE_MoP.pdf. (accessed 3 May 2010).

effectiveness (MOE) are different. MOEs represent the customer view of a product, project, or system and are qualitative in nature. A MOE example for the JQS is total number of JQOs. MOPs measure progression toward the stated goal whereas MOEs indicate the effectiveness of the process. The JQS, OPMEP, and other joint policy focus on creating structures where officers reach milestones. Various agencies and staffs report these milestones using MOPs to reach the MOE of total number of JQOs. The JQO total number MOE is DOD's definition of effectiveness. According to DOD logic, the more JQOs an officer accumulates, the more "joint" he/she is. This system or some version of it has been in existence for twenty plus years, yet jointness continues to elude us. What MOE should the DOD use to measure jointness?

JEO Type	Frequency	Opportunity	Perception	Perspective	Context
Operations					
Staffwork					
Training					
Education					

Figure 6: JEO Rating Matrix

Source: Author's Own Work

Figure 6 summarizes the four JEO categories and their corresponding rating to the five criteria previously mentioned in the monograph. Of the four JEOs, education provides frequency throughout a person's career. Opportunity remains constant for pure education opportunities in both residence and distance learning capacities. It tapers off for purely residence opportunities due to the competitive nature of the selection process as officers increase in rank. The perception element is yellow for education, green for perspective, and

green for context. Although not complete for this methodology, education represents the closest of the four JEOs to facilitate joint mindedness in the DOD. This analysis provides the channel to move from the theory of joint mindedness to the application of it within the current system. Education therefore is the focal point for this practical application of the concept and represents the center of gravity for creating effective joint officers.

Chapter 4

Recommendations

Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand.

Confucious 450 BC

Until this point, the author has discussed joint-mindedness in theoretical terms. Joint-mindedness occurs through a hierarchical P2C framework that creates cognitive symmetry. The hierarchy arranges these three elements beginning with perspective, elevating to perception, and finally reaching context creating a synthesis of both service and joint perspectives that ultimately achieve joint mindedness. The analysis in Chapter 4 concluded that education is the best opportunity to create joint-minded officers, despite the two deficiencies: opportunity and perception. Opportunity is essential to the process because in order to develop joint mindedness, the JQS and services must provide the chance to experience joint education. Without this opportunity, officers must develop cognitive symmetry on their own, which may or may not occur due to service desires or operational requirements. Additionally, joint education supports only two of the three P2C elements. In order to develop joint mindedness as the DOD's measure of effectiveness, education requires all three P2C elements.

This chapter provides three recommendations to promote change to opportunity and the perception element of P2C within JPME only. It is important to separate education from joint education because both are important in the development of career officers. Joint education and regular education are parallel lines of effort but the following three recommendations address joint education only due to the nature of this thesis. These recommendations target key areas in the JPME construct

that help to facilitate joint mindedness through the development of cognitive symmetry within the DOD.

These three recommendations are theoretical, conceptual, and practical. The first recommendation is theoretical and deals with current DOD education policy. DOD OPMEP policy guidance uses two of the three Bloom's Taxonomy learning domains to guide the efforts of JPME in the DOD. The two domains are cognitive and affective. JPME should include the third learning domain, psychomotor, to facilitate the development of common perceptions within service officers. The second recommendation is conceptual. The author proposes a new conceptual framework entitled the Capstone Conceptual Framework (CCF). CCF is a visual representation of the ideal DOD system to facilitate joint mindedness within JPME by focusing joint education efforts at the intermediate level and not on the current system which targets senior officers. The design is conceptual and serves as a model to guide efforts to focus effect on the most important part of an officer's career. The third recommendation is practical. This recommendation provides solutions for expanding joint curriculums, students, and faculty through the implementation of the Modular Joint Warfighting Curriculum (MJWC). The MJWC uses synergy, unity of effort, and modularity to deliver quality joint education to mid-level officers that leverages against the decisive point of an officer's career, the intermediate level.

Reality versus Utopia

Jointness is a complex problem. There are many opinions about how to fix jointness, and it is difficult to find consensus. Developing joint mindedness—the solution this thesis proposes to the problem of creating jointness across the services—within the DOD is a very tall order, and there is no presumption that moving toward the goal of joint mindedness will be an easy endeavor. Getting the services to act as one because

everyone thinks alike is utopian. In order to continue the discussion pragmatically, four constraints bound the following recommendations. First, the problem to foster joint mindedness is difficult due to the nature of DOD, student populations, and individual service requirements. The Army provides intermediate education for all of its majors whereas the other services use selection boards. This makes it problematic to recommend a universal JPME solution geared towards every officer at the intermediate level. Second, the composition of student bodies to foster jointness, as DOD policy states with equal parts from each of the services, is difficult to achieve outside of the JFSC environment. This is also true for faculty. Recruiting military faculty for joint educational institutions is difficult due to the requirements of joint and service staffs, operations, command, and other service priorities. Third, the contradiction between service educational needs and joint educational needs creates a competition that causes polarity in the two efforts. This is due to the limited contact hours that schools have with students and the differing opinions over what each service thinks its officers need to know. The final reality is money. Military budgets are shrinking. Budget considerations loom heavily on service operations and training costs. Additionally, force modernization and reconstitution are priorities as operations wind down and forces begin to redeploy. Money is the key hurdle to any recommended solution. With these constraints in mind, the author proposes the following three recommendations.

Theoretical Recommendation

The Chairman's Officer Professional Military Education Policy (OPMEP) is the current DOD PME policy. The purpose of the OPMEP is to "distribute the policies, procedures, objectives, and responsibilities for officer professional military education (PME) and joint officer professional

military education (JPME)."[1] The OPMEP uses Bloom's Taxonomy of Learning Objectives to describe levels of learning for both PME and JPME programs. The OPMEP does not cite Bloom by name, but comparison between the OPMEP and Bloom's Taxonomy reveal congruency. Therefore, the author concludes that the OPMEP uses Bloom's Taxonomy to describe learning objectives for JPME.[2]

Bloom's Taxonomy, developed in 1956 by Benjamin Bloom, identifies three domains for educational learning activities: cognitive, affective, and psychomotor.[3] The cognitive domain involves "knowledge and the development of intellectual skills. This includes recall or recognition of specific facts, procedural patterns, and concepts that serve in the development of intellectual abilities and skills."[4] The affective domain "includes the manner in which we deal with things emotionally, such as feelings, values, appreciation, enthusiasms, motivations, and attitudes."[5] The third domain is the psychomotor domain. Bloom did not finish this stage of his taxonomy of learning, but Anita Harrow expanded his work in 1972. According to Harrow, the psychomotor domain is "organized according to the degree of coordination including involuntary responses as well as learned capabilities."[6] In her psychomotor taxonomy, Harrow recognized perceptual learning that occurs in the psychomotor domain. Perceptual learning "refers to

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[1] US Department of Defense. Chairman of the Joint Chiefs of Staff, *Officer Professional Military Education Policy (OPMEP).* CJCSI 1800.01D. (Washington, DC: JCS, 2005), 1.
[2] Ibid., E-A-1.
[3] Don Clark, "Bloom's Taxonomy of Learning Domains,"http://www.nwlink.com/ ~donclark/hrd/ bloom.html
[4] Quoted in Don Clark, "Bloom's Taxonomy of Learning Domains," http://www.nwlink.com/~donclark/ hrd/bloom.htm from Benjamin Bloom, *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain.* (New York, NY: David McKay Co Inc).
[5]Quoted in Don Clark, "Bloom's Taxonomy of Learning Domains," http://www.nwlink.com/~donclark/ hrd/bloom.htm from David Krathwohl, Benjamin Bloom, and Bertram Masia, *Taxonomy of Educational Objectives, the Classification of Educational Goals. Handbook II: Affective Domain* (New York, NY: David McKay Co., Inc).
[6] Quoted in "Harrow's Taxonomy of Psychomotor Domain," http://www.ohio.edu/ recreation/ resources/Assessment_Documents/Learning_Taxonomy.PDF

interpretations of various stimuli that enable one to make adjustment to the environment."[7] These stimuli come from experiencing something firsthand.

An analysis of Bloom's three levels of learning with the P2C framework indicates congruence between the two concepts. The psychomotor domain is similar to this thesis' definition of perception. Both concepts deal with learning that occurs from firsthand direct experience with an activity. Likewise, the affective domain is comparable to perspective. The affective domain seeks to build affective behavior or learning that deals with feelings or emotional areas. The OPMEP uses the affective domain to create perspective among students in JPME learning by exposing them to other service members in seminar settings. Lastly, the cognitive domain is analogous to context. Cognitive learning describes learning that is knowledge based. Context, the learning of joint schemas, is this type of learning. Bloom's taxonomy and P2C provide complementary concepts to promote the development of joint learning objectives in JPME.

Unfortunately, the OPMEP recognizes only the cognitive and affective domains. To make the OPMEP approach complete, this author recommends using all three of Bloom's Taxonomy levels to develop learning objectives in JPME. Using Bloom's psychomotor domain accounts for the shortfall in this type of perceptual learning in JPME today. Perceptual learning incorporates seeing an Army BCT in action and hearing the brigade commander talk about his considerations for mission success. These considerations include the mission, the enemy, the terrain and weather, his troops and support available, time available, and civil considerations (METT-TC). Officers from the Army, Navy, and Marine Corps should experience the capabilities of the Air Force at a firepower demonstration at Nellis Air Force Base or a Red Flag exercise.

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[7] Ibid.

Additionally, Army officers should experience naval warfare firsthand by touring naval cruisers or destroyers. These example activities that reach the psychomotor domain give officers from different services the perception needed to develop joint mindedness.

Conceptual Recommendation

The intermediate level colleges (ILC) are the optimum place to focus effort based on three reasons. First, officers are at the midpoint of their career and will likely serve in both staff and command positions after ILC. The officers, who go to staff jobs, will serve in both joint and service staff positions. Service on joint staffs requires joint knowledge to function as joint staff officers. Furthermore, service staff assignments are requiring more detailed knowledge in joint matters as well. For example, Air Force officers deploying to an Air Operations Center (AOC) or Air Component Coordination Element (ACCE) work with Joint Task Forces on a daily basis. Today, joint and service staff officers require in-depth joint education. Second, officers in command positions can influence their units to develop unofficial joint training relationships with sister service units that are in close proximity. For example, Air Force units at Seymour Johnson AFB might explore opportunities to do close air support training at either Fort Bragg or Camp Lejeune. These training relationships build trust and confidence in each prior to actual combat operations and should begin early in an officer's career. Receiving in-depth joint education (JPME II) at the senior war college level is just too late. Third, focused joint education starts the officer on a path for success. Some officers will command joint task forces in their future. Educating them early and often provides them the ability to succeed. They will know what they have learned, and they will know what they need to learn. This process starts them on a path of self-discovery and learning that sets them up for success in the future.

Senator Ike Skelton proposed a framework in 1989 for PME. In the report, he recommended that a multi-tiered program, designed to target what a particular officer needed to know at a particular rank. General/Flag officers, for example, should focus on national security strategy. Senior-level education would focus on national military strategy. The intermediate level would focus on combined-arms operations and joint operational art. Primary education would focus on branch or warfare specialty.[8] Since this report, PME and JPME at the intermediate level have experienced "mission creep" at the expense of core joint warfighting curriculum areas. Now, officers must learn interagency cooperation, be cross-culturally competent, and familiar with strategy and national policy. How do we fit 20 pounds of educational requirements into the 5 pound proverbial sack that is constrained by resources and time? The military's core function is warfighting. The military fights as a joint force; therefore, our service collective core function is joint warfighting. Joint warfighting results from jointness; therefore our educational focus for JPME should be joint warfighting. DOD policy should refocus joint education at the appropriate level where it has the most effect.

Eight years after the Skelton report, former Vice President Dick Cheney chaired a committee from DOD and the Center for Strategic and International Studies (CSIS). The report, titled *Professional Military Education: An Asset for Peace and Progress,* made several recommendations for every level of PME. For intermediate-level education, the Cheney report recommended that DOD "deepen and expand the joint curriculum at the intermediate service colleges."[9] The recommendation elaborated on this by stating "that more should be done

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[8] House Committee on Armed Services. *Report of the Panel on Military Education of the One Hundredth Congress of the Committee on Armed Services,* prepared by Hon Ike Skelton, 100th Cong., 1 sess., 1989, 3.

[9] Richard Cheney, *Professional Military Education: An Asset For Peace and Progress.* (Washington, DC: The Center for Strategic & International Studies, 1997), 40.

to make service colleges the primary source of comprehensive joint military education."[10] DOD needs to "get back to the basics" and instill a new look by implementing the changes that Skelton recommended in 1989.

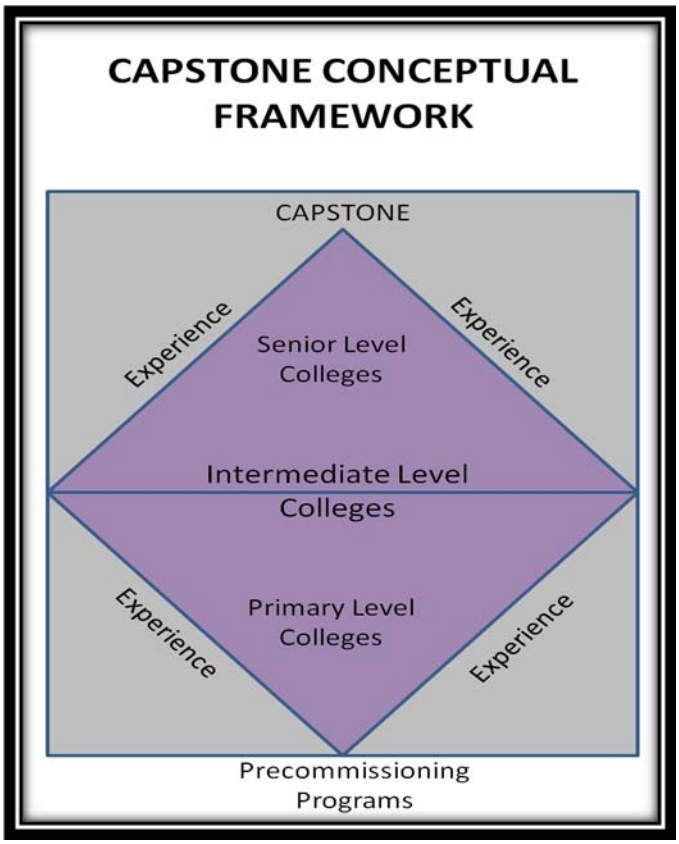

Figure 7: Capstone Concept Framework

Source: Author's Own Work

The Capstone Conceptual Framework (CCF) is a system design for the proposed focus on JPME at the intermediate level. This design (Figure 7) uses the JPME Capstone program as its highest tier. Ideally, officers progress from the bottom of the diagram to the top. Those that progress to the Capstone program arrive with a solid foundation of joint education that began with familiarization at precommissioning programs.

[10] Ibid., 40

As the officer progresses, primary colleges provide more basic joint education opportunities. The widest point of the diagram signifies the intermediate level of JPME where the system provides the maximum amount of joint education to officers due to opportunity and investment. This complies with the Cheney report's recommendation to make the intermediate level the focal point for joint education. After the intermediate level, the focus for JPME begins to taper off as officers reach senior-level colleges. At this level, officers focus more on the interaction between the national instruments of power and joint forces to include national strategy and interagency synergy. Surrounding the JPME construct is a gray area, signifying the breadth of experience that combines with joint education at various points in a person's career. Experience coupled with JPME carries the prospective general officer to the Capstone course with the tools to be successful at the operational level of war.

A dedicated commitment to the CCF would help the DOD develop an overall strategy for JPME, an educational strategy that—based upon the conclusion derived from an in-depth analysis utilizing the P2C Framework—would include the psychomotor domain along with the other two components of Bloom's taxonomy. Unfortunately, despite the attempts by PME reformers, a comprehensive strategy to develop joint officers still eludes the DOD. The OPMEP policy document provides direction and guidance but lacks a stratagem.

Practical Recommendation

The Modular Joint Warfighting Curriculum (MJWC) is an attempt to focus effort at the intermediate level of PME for developing joint-minded officers in the DOD. MJWC is a concept based on the Joint Advanced Warfighting School (JAWS) located at Joint Forces Staff College. The JAWS curriculum objective is to produce graduates who

can "create campaign quality concepts, plan for the employment of all elements of national power, accelerate transformation, succeed as joint force operational/strategic planners and be creative, conceptual, adaptive, and innovative."[11]

JAWS is an 11 month program that provides either intermediate- or senior-level education, a fully accredited Master of Science degree in Joint Campaign Planning and Strategy, and both JPME 1 and 2.[12] Each JAWS class is composed of joint, international, and interagency personnel, which brings the quality of discourse to a higher level. The JAWS curriculum concentrates on military history, warfighting theory, strategy formulation, operational art, information operations, counterinsurgency planning, campaign design, and joint operations planning processes.[13] Students visit several combatant commands, the Joint Staff, and other government agencies in Washington, DC.

The author believes that individual service-based knowledge is a critical piece of any future joint curriculum. This knowledge originates from the perceptual learning mentioned previously under the theoretical recommendation. MJWC is an attempt to replicate the JAWS concept with the addition of perceptual learning to a larger population of specially selected officers from all of the services. To make this happen, the recommendation proposes solutions to three problems: facilities, faculty, and students that are broad in scope and serve as starting points for more in depth discussion on these controversial issues.

MJWC is a satellite concept that uses the current PME architecture and service facilities. Under this proposal, each service school would have a MJWC section that serves about 30 students. Each section would fall under the administrative control of each service school for the purposes of day-to-day operations. The curriculum and policy

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[11] Joint Forces Staff College, *2009 Stakeholders Report*. (Norfolk, VA: Joint Forces Staff College, 2009), 10.
[12] Ibid., 10.
[13] Ibid., 11.

guidance, however, would fall under the operational control of National Defense University (NDU). The service school leadership and NDU leadership would collaborate on matters relating to MJWC sections that are specific to each area, but NDU would retain authority for the execution of the curriculum in order to keep joint accreditation within the guidelines set forth by policy. Critics will argue that using existing facilities displaces service school slots. This is true to some extent, but officers who would have attended their service school anyways would just be moving laterally to MJWC.

The difference between service schools and joint schools such as JFSC is what is termed as the "joint" environment. The "joint" environment is different from a regular service school because the student and faculty ratios are evenly divided among the services.[14] These evenly mixed populations provide differing opinions and prevent undue influence from any one service thus creating a "joint" environment that indirectly promotes equality among class members despite their service. The popular belief is service schools do not have these mixes; therefore, they do not qualify as joint environments. Equality in the form of service attendance ratios distinguishes the difference between a joint environment and one that is not. Developing equal representation for both students and faculty is the key to creating "joint" environments within MJWC sections. Joint environments are essential because the reinforce the P2C framework to develop joint-mindedness through cognitive symmetry. Students and faculty are the biggest constraints to the proposal.

Quality military faculty members are essential to JPME. The faculty problem has two components. First, it is difficult to get quality officers to volunteer for instructor duty. Second, joint environments, as envisioned in the MJWC proposal, require mixes of other service officers

[14] Glen Jones (Associate Professor, Joint Forces Staff College), interview by author 12 April 2010.

to provide their expertise to the curriculum. The first problem directly affects the second problem because a smaller pool of total instructors makes it problematic to increase the scope of JPME. PME institutions require quality military faculty. Major General Robert Scales USA (ret) made the following comment with respect to the problems in the Army PME system and it reflects the importance of instructor duty in service schools:

> Service schools produce two classes: students and instructors. Students graduate with knowledge, valuable to be sure. But instructors return to the force with the wisdom accumulated from long term immersion in a subject and an amplified appreciation of the art and science of war that comes from time to reflect, teach, research, and think. Perhaps that is why 31 of the 35 most successful corps commanders in World War II served at least one tour as an instructor in a service school.[15]

Increasing the importance and quality of military faculty requires changes to promotion methods, personnel policies, and officer expectations, which are beyond the scope of this recommendation. The following two proposed solutions address joint instructor duty only.

DOD policy must change to reflect joint instructor duty as joint duty credit. Some officers stay behind as instructors after they finish another service's school. Each of the service schools employs this method of recruiting for instructors from other services to teach their expertise during the joint curriculum. Instructor duty at a service school, different from your own, is an excellent chance to increase your knowledge of that service while learning how to advocate for your own both objectively and rationally. Who should these non-host military faculty members be? In many cases, PME is the first opportunity for students to observe different service cultures firsthand. Should the

[15] Maj Gen Robert Scales (ret), "Too busy to learn," *Proceedings Magazine*, February 2010, 284.

Army not provide its best officers for the Air Force schools? Should the Air Force not provide its best officers to the Marine Corps schools? There are many incentives for this not to occur. Each service needs its best people back in the field, in command, or on a high-impact staff to use the education they just received. The DOD should make joint instructor duty attractive to potential officers by offering joint duty credit for these tours.

There are many incentives to lure the best and brightest for this duty. One of these incentives is joint duty credit under the Joint Qualification System. In 2007, the DOD realigned the Joint Duty Assignment List (JDAL) to exclude these types of assignments. The JDAL lists all jobs that qualify for joint duty credit. Joint Duty Credit for faculty assignment at schools that teach JPME II remained while the policy excluded non-host instructors at other schools. DOD policy eliminated these instructor positions "except those responsible for preparing and presenting JPME Phase II courses in national security strategy; theater strategy and campaigning; joint planning processes and systems; and joint interagency and multinational capabilities and the integrations of those capabilities."[16] The reasons for removing these JDAL billets "have been variously given as an oversight, a temporary measure and a 'nonproblem' because new equivalency rules do not mandate JDAL billets as a prerequisite. In the meantime, military bureaucrats are busy trying to rewrite these billets back into the JDAL."[17] More importantly, DOD should offer instructors who teach the MJWC at their own service school location joint duty credit because the MJWC includes both JPME 1 and 2. This makes instructor duty at MJWC attractive for those at other schools as well as service schools.

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[16] DODI,23.

[17] John Kuehn, "Joint Education is the key to true jointness," *Armed Forces Journal*, April 2010. http://www.afji.com/2010/04/4393061/

The Joint Academic Faculty Cell (JAFC) is the second proposed solution to help facilitate the needed instructor resources for the proposed MJWC. JAFCs reside at service schools and are populated with joint instructors who can teach all facets of their service specific curriculum to both MJWC and the collocated service intermediate school. Joint instructors would include members of all of the services. NDU recognizes instructors from the host service located at a host service base as joint instructors. For example, Air Force instructors selected to be JAFC instructors at Maxwell AFB receive joint instructor duty credit. JAFCs also leverage synergies with each other by using collective expertise. JAFC instructors from Quantico could teach students at Fort Leavenworth in subjects where Quantico JAFC instructors have relevant operational experience. MJWC would also deploy students to alternative locations to learn from direct experience. Each of the four cells, corresponding to each of the four services, deploys to DOD locations where they witness collectively the potential of all service capabilities. This aspect would use synergy and create joint mindedness in MJWC students.

Student populations represent the final hurdle and raise two concerns. The first concern deals with the dilution of joint student populations in mainstream service schools. The thinking follows that other service students who participate in MJWC would be removed from the general student population where they can mix and provide valuable insight to a service-based school population. MJWC components would comprise 30 students that form equal representation to create the joint environment as mandated in policy. Service schools would retain their normal student mixes because each service selects MJWC students for this unique and separate program. The second concern deals with the total number of students required for a program of this scope. Four MJWC components would equal 120 total students with approximately

40 students coming from each of the four services.[18] That equates to 10 students per MJWC component. One way to select officers is to use a common database managed by NDU. Services provide their selected officers into a NDU-sponsored common database. The NDU, through JFSC, uses the database to coordinate student mixes at the various MJWC locations based on job expertise, service expertise, and operational expertise. MJWC candidates would be those individuals within each service who have demonstrated the technical and tactical competence in their respective service today. Ultimately, MJWC graduates would become the leaders of their service and the joint force of tomorrow.

Developing joint mindedness through cognitive symmetry among the student population is the primary objective. To accomplish this, three focus areas comprise the proposed MJWC curriculum. These areas correspond to the three elements of the P2C framework. The first component deals with developing perspective. The activities within this component, such as collaborative and cooperative learning within the student seminars, would occur throughout the entire curriculum. This focus area would expose officers to the thought processes of different services and enable them to see past stereotypes. This focus area occurs in PME today and would be kept for the MJWC. The perception component would occur at the beginning and at the end of the curriculum. Field trips to service exercises at the beginning would provide the necessary psychomotor learning that reinforces perceptual learning so that officers experience the capabilities of their sister services firsthand. In the latter part of the curriculum, students would attend joint warfighter exercises where they could experience how each of the services operate to solve a joint problem. USJFCOM should take the lead to synchronize these perceptual learning opportunities. Currently, these

[18] This number is an approximation. The Marine Corps is smaller than the other services and requires fewer slots.

opportunities do not occur in any of the JPME programs via a structured course requirement. Context is the final focus area and involves two stages. The first stage should develop basic and intermediate knowledge of all service doctrine and warfighting practices. The second stage builds on the first stage by moving beyond individual service knowledge to joint doctrine and operating concepts.

Each of the three recommendations (theoretical, conceptual, and practical) provides a specific way to address the issue of joint mindedness in the DOD. Joint mindedness is the catalyst to increased jointness. The theoretical and conceptual recommendations target JPME in general. These recommendations provide expansion and clarity to the JPME structure. The practical recommendation addresses one way to increase joint mindedness through the development of a new Modular Joint Warfighting Curriculum (MJWC). Unfortunately, MJWC would not be available to every officer. The resources to accomplish this are unrealistic. Realizing this, the MJWC concept looks to leverage possible synergies, expand specialized curriculum, and develop officers who will lead joint forces in the future.

Chapter 5

Conclusion

Fools ignore complexity. Pragmatists suffer it. Some can avoid it. Geniuses remove it.

-- Alan Perlis

The world is changing. By the year 2030, the world will see a dramatic shift in population demographics, sources of energy, economics, and technology. The Joint Operating Environment (JOE) of tomorrow will see the world's population swell from 6 billion to 8.2 billion.[1] Developing countries will lead the way in population growth. People are migrating from under developed areas to developed areas in search of opportunity. According to the strategic appreciation conducted by US Special Operations Command (USSOCOM), cities will see population increases where minorities today become the majority tomorrow, which will in turn affect local government representation and influence. Crime will increase as urban centers fail to meet opportunity demand.[2] This will cause instability around the world and be a cause of major concern for the common good.

Energy demand will increase as populations increase. In 20 years, experts predict the world energy demand to be 50% greater than today. In order to meet this demand, the world will need to increase its output equivalent to Saudi Arabia's current energy production every seven years.[3] Competition for critical energy sources is inevitable. China, for

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[1] United Nations Department of Economic and Social Affairs, *World Population to 2300* (New York, NY: United Nations, 2004), 3.
[2] USSOCOM J-56 Division. *Global Strategic Appreciation 2009* (U). January 2009.
[3] USJFCOM, *The Joint Operating Environment 2010(* Suffolk, VA: Joint Futures Group, JFCOM, 2010),16.

example, is expanding its oil operations in Africa. It requires access to the area via critical geographic chokepoints such as the Strait of Malacca. All indicators point to an increase in demand and a huge decrease in supply.

The world economy will also see massive growth. Using conservative estimates, analysts predict the global economy to double due to population increases.[4] In addition, "there are six nations in the developing world currently who possess populations of over 100 million people and a GDP of at least $100 billion."[5] These countries include China, Russia, India, Indonesia, Brazil, and Mexico. Bangladesh, Nigeria, Pakistan, and the Philippines will most likely join this group by 2030.[6] These 11 countries in turn will represent a newer global security environment because they will possess the capability to develop significant military forces in their respective regions. Wars in Iraq and Afghanistan have forced the United States to increase operating budgets overseas at the expense of force modernization and technological advancement. Shrinking budgets today for force modernization imply reduced military resources tomorrow.

Finally, the world is seeing technological advancement on a massive scale. Social needs are causing technological innovation in computers and communications. Computing power is doubling every two years and will continue to do so for the near future.[7] Analysts predict that computers will have the same computing capacity as the human brain by the early 2020's.[8] Increasing capability in computers runs parallel to increased usage of the internet. Technology will connect

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[4] Thomas Fingar, *Global Trends 2025: A Transformed World. National Intelligence Council* (Washington, DC: US Government Printing Press, 2008), 7-13.
[5] USJFCOM,14.
[6] Ibid., 14
[7] Martin Libicki, *Conquest in Cyberspace: National Security and Information Warfare* (New York, NY: Cambridge Press, 2007), 292.
[8] Hans Moravec, "When will computer hardware match the human brain?" *Journal of Evolution and Technology*, Vol. 1 (1998).
http://www.transhumanist.com/volume1/moravec.htm. (viewed 12 November 2009).

the world on an unprecedented scale. The internet connects 23.8% of the world population to each other compared to 11% in 2002. Six of 10 people, just over 4.1 billion people, in the world use cell phones as the preferred choice for their communication needs. Globalization continues to connect the world in ways never before imagined. Technological determinism will influence how states prepare for and conduct warfare.

These trends and influences are shaping the world of tomorrow. The operational environment is more complex, more connected, and more uncertain than ever before. To maintain its competitive and qualitative edge, the US will continue to use its instruments of power to influence the global context. To enable soft power options such as diplomacy and economics, the US relies on the hard power that its military provides. The capability to wield hard power guarantees security and prosperity for the nation. The US military is and will continue to be an integral component to the national security of the United States. Joint force synergy is the manifestation of US military power. Despite the consensus by most that US forces will employ jointly in tomorrow's troubled spots, US forces continue to compete for influence, think with service biases, and squabble over resources at the expense of one another. The competition for resources is a major focal point for problems with jointness and is the cause for significant friction. Competition for resources leads to justifications of service missions in theater or vice versa. One Marine Corps officer opined the reality of the situation when asked if there was a perception that the USAF lacked jointness:

> The very nature of our acquisitions process and requirements determination (read funding) is a competitive, zero sum process. All the services have a "me first, then you" attitude that pervades thinking across the board. Just look at the differing ways we use historical data to "prove" that each of our respective capability suites is "of course" a solitary war winner. Just ask any service "who" wonWWII.

> We'll all use the same data to prove 'we' won it, and everybody else was just holding the enemy by the nose while (input submarines, airplanes, infantry divisions, carriers here) broke the enemies back.[9]

The reality of this comment infers a dynamic that is present in all of the services. As long as this way of thinking pervades the DOD, true jointness will always be a goal and not a reality. Mandating organizations to interact through joint staffing, operations, personnel measures, and limited joint education measures is not enough. GNA forced the issue on the services and made progress but true jointness continues to be a problem. Getting to the root of the problem at the individual level of analysis is key.

Joint mindedness is a new concept that focuses on creating cognitive symmetry between officers of different services. The P2C framework serves as a starting point and focuses on three key elements: perspective, perception, and context. P2C arranges these elements in a hierarchy that implies, via a Maslow's Hierarchy of Needs comparison, that progression to the higher level requires recognition of the lower levels by individuals. Perspective is the foundation and the first level. Different service individuals must share a common perspective devoid of stereotypes or other faulty mental impressions. Once this occurs, they must proceed to the next level to develop perception. Officers achieve perception through direct experience while seeing firsthand the environments of their other service counterparts. Experiential Learning Theory and Harrow's psychomotor domain support this kind of learning. Once the individual achieves perspective and perception, he/she can proceed to learning joint schemas. Joint schemas such as those found in joint functions—maneuver, fires, intelligence, command and control, force protection, logistics—provide the context element. Context

[9] Colonel Tracy King (School of Advanced Warfare), email interview with author 18 February 2010.

represents the highest portion of the P2C hierarchy and the goal for joint mindedness. Joint-minded officers approach problems objectively with the added caveat that other joint-minded officers expect them to act rationally as well. Joint-minded officers look at a problem through the lens of differing levels of analysis to arrive at the appropriate solution. He/she can take an individual service perspective or another service perspective. The joint-minded officer understands other service viewpoints and appreciates their strengths and weaknesses. Finally, joint minded officers arrive at joint solutions after analysis of all factors.

The DOD uses the Joint Qualifications System to determine joint competency through the accumulation of points throughout an individual's career. DOD assumes that joint-qualified officers are joint-minded ones. Can an officer who is joint qualified also not be joint minded? Can an officer who is not joint qualified be joint minded? The answer to both of these questions is yes. The JQS develops officers by developing a very specific skill set, who can act as members of a joint staff. Joint staffs require this skill set, but there should not be an assumption that joint-qualified officers will automatically become joint-minded ones. Accrual formulas that emphasize point totals are one way of measuring the performance of the JQS. Joint qualifications levels are another measure of performance. These MOPs help report the levels of jointness to Congress with the belief that high levels of both translate to better jointness. Are we judging jointness from the number of JQOs we produce? Is the JQO the measure of effectiveness we want to measure how joint we really are? This problem requires a new approach; one that focuses on developing officers who are both joint qualified but also joint minded. JQOs benefit joint staffs; joint minded officers benefit the entire joint force.

The world is changing. To meet those challenges, the US needs a military that can achieve synergy through jointness. The Capstone

Concept for Joint Operations (CCJO) explains the importance of joint operations and the challenge of acting jointly:

> The Services have evolved diverse sets of capabilities to operate effectively in certain situations and physical domains. The essence of joint operations is not only to match each Service to its proper situation so that it contributes most effectively to success, but also to combine Service capabilities such that each enhances the effectiveness and compensates for the vulnerabilities of the others. Joint synergy essentially "scales up" the commonly understood mechanism of combined arms. Achieving that sort of complementary synergy requires more than just understanding the particular capabilities and limitations that each component brings to the operation. It also requires the ability to visualize operations holistically, identifying the preconditions that enable each component to optimize its own impact and then diagnosing how the other components might help to produce them. It requires the ability to think in terms of the performance of joint functions -- maneuver, fires, intelligence, command and control, force protection, logistics -- independent of a specific Service or domain. Finally -- not the easiest challenge -- it requires the ability and willingness to compare alternative component missions and mixes solely from the perspective of combined effectiveness, unhampered by Service parochialism. Above all, achieving joint complementarity requires mutual trust that the missions assigned to components will be consistent with their intrinsic capabilities and limitations; that those capabilities will not be risked for insufficient overall return; and, above all, that component obligations once accepted will be executed as promised. As a later precept suggests, the lower that component synergy routinely can be driven, the greater will be the prospect of developing that mutual confidence.[10]

Trust and confidence between services are the measures of effectiveness we must strive for to achieve better jointness. Joint-minded people with cognitive symmetry are the key.

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[10] USJFCOM. *The Capstone Concept for Joint Operations (CCJO) Version 3.0 (*Suffolk, VA: JFCOM, 2010), 24.

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